

TRAFFIC VOLUMES REPORT

Interstate 5 – El Toro Interchange Improvements

Orange County, California
District 12-ORA-5 PM 17.8/19.7

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TABLE OF CONTENTS

SECTION	PAGE
1.0 Introduction	5
2.0 Traffic Volume Development	11
2.1 Existing (2017) Freeway Traffic Volumes.....	11
2.2 Existing Arterial (2017) Traffic Volumes.....	16
3.0 Traffic Forecasting Methodology	19
3.1 Future Freeway Traffic Model Volumes (2030) and (2050).....	19
3.2 Future Arterial Traffic Model Volumes (2030) and (2050).....	24
4.0 Opening Year 2030 Forecast Traffic Volumes	27
4.1 2030 Traffic Volumes: No Build.....	27
4.2 2030 Traffic Volumes: Alternative 1.....	27
4.3 2030 Traffic Volumes: Alternative 2.....	31
4.4 2030 Traffic Volumes: Alternative 3.....	35
4.5 2030 Traffic Volumes: Alternative 4.....	39
5.0 Design Year 2045 Forecast Traffic Volumes	43
5.1 2050 Traffic Volumes: No Build.....	43
5.2 2050 Traffic Volumes: Alternative 1.....	43
5.3 2050 Traffic Volumes: Alternative 2.....	47
5.4 2050 Traffic Volumes: Alternative 3.....	51
5.5 2050 Traffic Volumes: Alternative 4.....	55

LIST OF TABLES

TABLE 2-1.1: I-5 NORTHBOUND EXISTING TRAFFIC VOLUMES.....	14
TABLE 2-1.2: I-5 SOUTHBOUND EXISTING TRAFFIC VOLUMES.....	15
TABLE 2-1.3: I-5 EXISTING MAINLINE TRUCK VOLUMES.....	15
TABLE 2-2.1: EXISTING ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	18
TABLE 3-1.1: I-5 NORTHBOUND OPENING YEAR 2030 TRAFFIC VOLUMES.....	20
TABLE 3-1.2: I-5 SOUTHBOUND OPENING YEAR 2030 TRAFFIC VOLUMES.....	21
TABLE 3-1.3: I-5 NORTHBOUND DESIGN YEAR 2050 TRAFFIC VOLUMES.....	22
TABLE 3-1.4: I-5 SOUTHBOUND DESIGN YEAR 2050 TRAFFIC VOLUMES.....	23
TABLE 3-2.1: 2030 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	25
TABLE 3-2.2: 2050 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	26
TABLE 4-1.1: ALTERNATIVE 1 2030 NORTHBOUND MAINLINE VOLUMES.....	28
TABLE 4-1.2: ALTERNATIVE 1 2030 SOUTHBOUND MAINLINE VOLUMES.....	29
TABLE 4-1.3: ALTERNATIVE 1 2030 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	30
TABLE 4-2.1: ALTERNATIVE 2 2030 NORTHBOUND MAINLINE VOLUMES.....	32
TABLE 4-2.2: ALTERNATIVE 2 2030 SOUTHBOUND MAINLINE VOLUMES.....	33
TABLE 4-2.3: ALTERNATIVE 2 2030 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	34
TABLE 4-3.1: ALTERNATIVE 3 2030 NORTHBOUND MAINLINE VOLUMES.....	36
TABLE 4-3.2: ALTERNATIVE 3 2030 SOUTHBOUND MAINLINE VOLUMES.....	37
TABLE 4-3.3: ALTERNATIVE 3 2030 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	38
TABLE 4-4.1: ALTERNATIVE 4 2030 NORTHBOUND MAINLINE VOLUMES.....	40
TABLE 4-4.2: ALTERNATIVE 4 2030 SOUTHBOUND MAINLINE VOLUMES.....	41
TABLE 4-4.3: ALTERNATIVE 4 2030 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	42
TABLE 5-1.1: ALTERNATIVE 1 2050 NORTHBOUND MAINLINE VOLUMES.....	44
TABLE 5-1.2: ALTERNATIVE 1 2050 SOUTHBOUND MAINLINE VOLUMES.....	45
TABLE 5-1.3: ALTERNATIVE 1 2050 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	46
TABLE 5-2.1: ALTERNATIVE 2 2050 NORTHBOUND MAINLINE VOLUMES.....	48
TABLE 5-2.2: ALTERNATIVE 2 2050 SOUTHBOUND MAINLINE VOLUMES.....	49
TABLE 5-2.3: ALTERNATIVE 2 2050 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	50
TABLE 5-3.1: ALTERNATIVE 3 2050 NORTHBOUND MAINLINE VOLUMES.....	52
TABLE 5-3.2: ALTERNATIVE 3 2050 SOUTHBOUND MAINLINE VOLUMES.....	53
TABLE 5-3.3: ALTERNATIVE 3 2050 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	54
TABLE 5-4.1: ALTERNATIVE 4 2050 NORTHBOUND MAINLINE VOLUMES.....	56
TABLE 5-4.2: ALTERNATIVE 4 2050 SOUTHBOUND MAINLINE VOLUMES.....	57
TABLE 5-4.3: ALTERNATIVE 4 2050 ARTERIAL INTERSECTION PEAK HOUR VOLUMES.....	58

LIST OF FIGURES

FIGURE 1-1: PROJECT LIMITS	5
FIGURE A-1: PROPOSED I-5 FREEWAY WIDENING (PROJECT 0K0231)	7
FIGURE A-2: ALTERNATIVE 1	7
FIGURE A-3: ALTERNATIVE 2	8
FIGURE A-4: ALTERNATIVE 3	9
FIGURE A-5: ALTERNATIVE 4	10
FIGURE B-1: AADT VOLUMES DURING MALL CONSTRUCTION	11

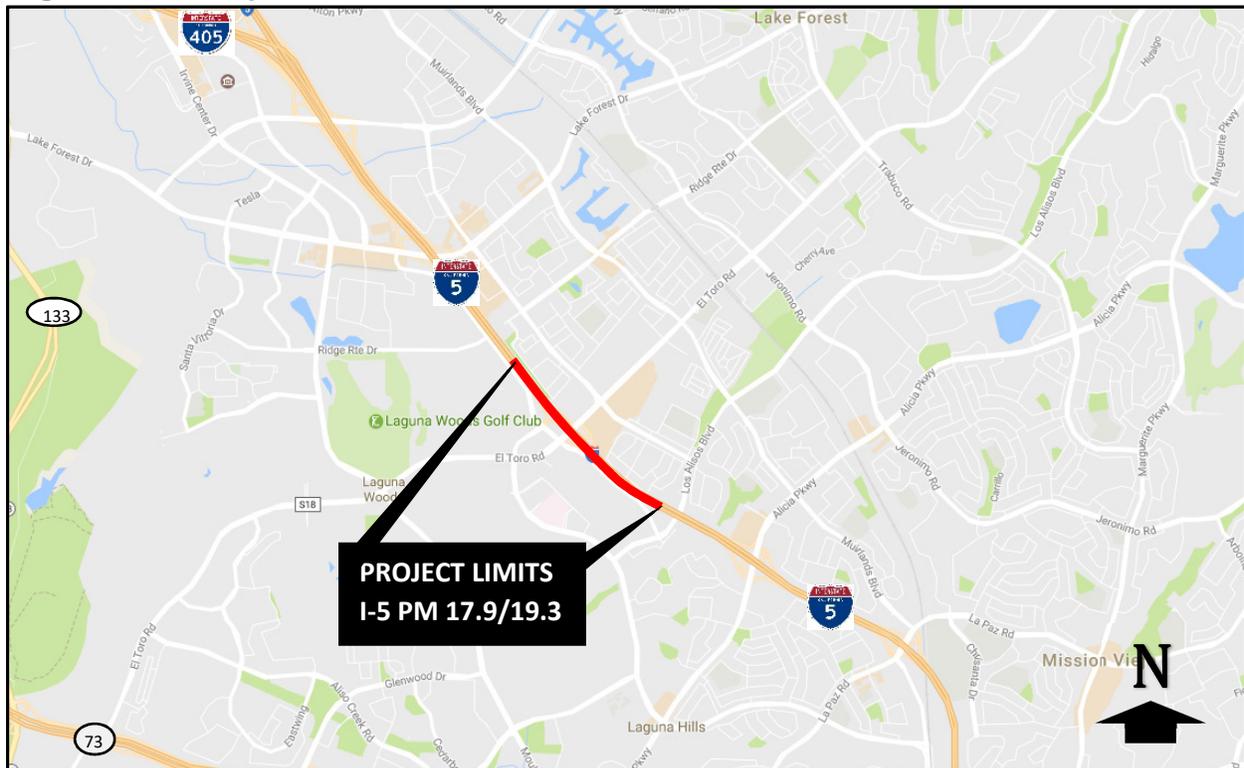
LIST OF APPENDICIES

APPENDIX A: INTERSECTION TURNING MOVEMENT VOLUME EXHIBITS
APPENDIX B: FREEWAY FACILITY VOLUME EXHIBITS

1.0 INTRODUCTION

The California Department of Transportation (Caltrans), in cooperation with the Orange County Transportation Authority (OCTA) proposes to improve the Interstate 5 (I-5)/El Toro Interchange. The proposed project would reduce congestion and improve traffic operational efficiency at the interchange on and off-ramp intersections and the surrounding arterial streets.

Figure 1-1: Project Limits



Caltrans is assigned by the Federal Highway Administration (FHWA) as the Lead Agency for compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project has been or is being carried out by Caltrans under its assumption of responsibility pursuant to we United States Code (U.S.C.) 327. This Traffic Volumes Report documents the development of existing and future traffic volumes for the I-5 El Toro Interchange Project Approval and Environmental Document (PA/ED) for the following alternatives:

- Existing (2017)
- Opening Year 2030 - No Build
- Opening Year 2030 Alternative 1 – Reconstruct SB I-5 Off-Ramp to Type L-9 Interchange (Remove Traffic signal at SB I-5 Off-Ramp to Avenida De La Carlota)

- Opening Year 2030 Alternative 2 - Southbound I-5 Off-Ramp Flyover Connecting to Bridger Road
- Opening Year 2030 Alternative 3 – Southbound I-5 Off-Ramp bypass to EB El Toro Road with Divergent Interchanges at Bridger Road/El Toro Road and Avenida De Carlota/El Toro Rd
- Opening Year 2030 Alternative 4 - Collector-Distributor for the SB I-5 On-Off Ramps
- Design Year 2050 - No Build
- Design Year 2050 Alternative 1 - Reconstruct SB I-5 Off-Ramp to Interchange to Type L-9 (Remove Traffic signal at SB I-5 Off-Ramp to Avenida De La Carlota)
- Design Year 2050 Alternative 2 - Southbound I-5 Off-Ramp Connector to Bridger Road
- Design Year 2050 Alternative 3 – Southbound I-5 Off-Ramp bypass to EB El Toro Road with Divergent Interchanges at Bridger Road/El Toro Road and Avenida De Carlota/El Toro Rd
- Design Year 2050 Alternative 4 – Collector-Distributor for the SB I-5 On-Off Ramps

The purpose of the proposed project is to address current and future travel demands at the interchange, reduce freeway queueing from the freeway on/off-ramps and minimize delay for the local arterial streets throughout the interchange.

The project will study a no build and four build alternatives. The build alternatives focus primarily on redistributing the southbound I-5 off-ramp traffic by adding alternatives to by-pass local arterial intersections that separate eastbound and westbound El Toro Road traffic.

The following paragraphs describe each Project alternative in detail and Figure A-1 through A-4 provides a schematic representation of the project alternatives.

Alternative: No Build

No Build Alternative would leave the interchange in its current planned configuration as proposed as part of the I-5 Widening Project (EA 0K020). The I-5 Widening Project proposes to add general purpose lanes in each direction on I-5 between Avery Parkway and Alicia Parkway and extend the second high-occupancy vehicle (HOV) lane from Alicia Parkway to El Toro Road. The I-5 Widening Project limits on I-5 extend from 0.5 miles south of SR-73 interchange (PM 12.4) to 0.2 miles north of the El Toro Road Undercrossing (PM 18.9), reestablish existing auxiliary lanes and construct new auxiliary lanes, and improve several existing on- and off-ramps. Additionally, the project proposes no HOV buffer, which will accommodate continuous access to the HOV lanes throughout the project limits (approximately 6 miles). The I-5 Widening Project is in the design phase. (See Figure A-1)

The I-5 widening project (0K0234) is anticipated to relieve some of the on-ramp congestion throughout the interchange during peak periods by increasing capacity to the mainline. However, it will also increase traffic demands of the interchange off-ramps, by improving mainline traffic flow and reducing travel times to the interchange.

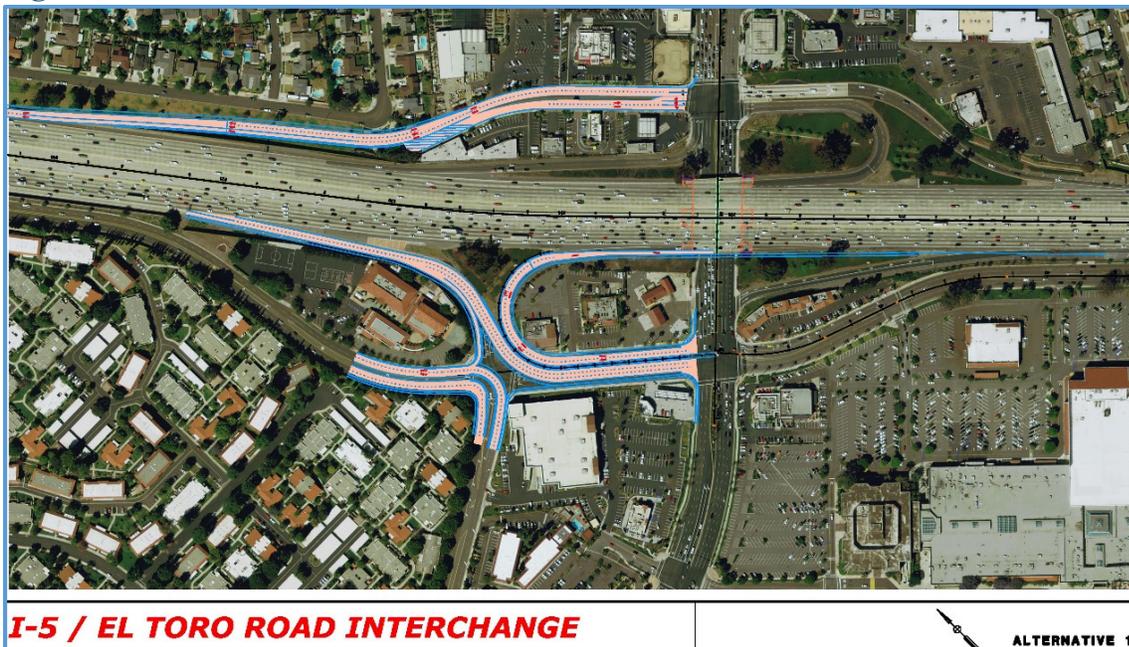
Figure A-1: After I-5 Widening on Project 0K0234 (December 2024)



Alternative 1: Modify SB I-5 Off-Ramp to Type L-9 Interchange

Alternative 1 proposes a new intersection (L type) at the existing southbound (SB) I-5 hook-offramp between Avenida de la Carlota and Paseo de Valencia; and the existing SB I-5 hook-onramp will be realigned to a loop-ramp. Portion of Avenida de la Carlota would be reconstructed. This work will also require modification to existing drainage culverts and relocation of any utilities in conflict with the proposed work. The existing northbound (NB) I-5 on-ramp will be replaced with a proposed NB I-5 on-ramp from Bridger Road; and Bridger Road will be reconstructed to accommodate the proposed NB I-5 on-ramp, and a continuous median left turn lane will also be proposed for local business to access from Bridger Road. Temporary construction easements will be required for the project. In addition, ground disturbance and the removal of vegetation and trees will be required. Retaining walls/sound walls will be constructed as necessary. The construction of the proposed project will require traffic and pedestrian detours. (See Figure A-2)

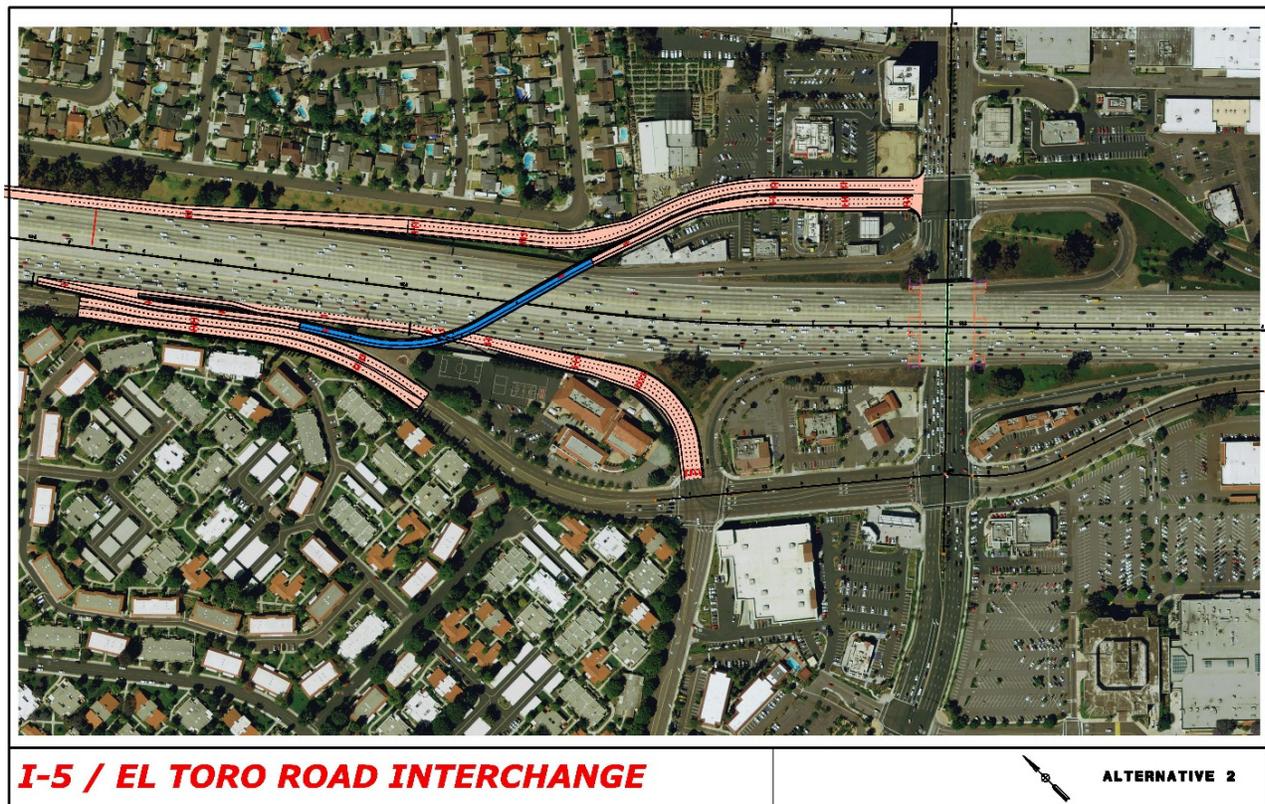
Figure A-2: Alternative 1



Alternative 2: Direct Flyover to Bridger Road

Alternative 2 proposes a flyover structure that directly connects the SB I-5 to eastbound (EB) El Toro Road by traversing over the existing SB I-5 hook off-ramp and the existing I-5 mainline, and connecting to Bridger Road. The existing SB I-5 hook off-ramp will be realigned to provide access to westbound (WB) El Toro Road and for the proposed SB I-5 flyover off-ramp to Bridger Road to provide access to eastbound (EB) El Toro Road. Bridger Road will also be reconstructed to accommodate the proposed NB I-5 on-ramp and the proposed SB I-5 flyover off-ramp. Business access through Bridger Road will be eliminated. Existing NB I-5 on-ramp will be replaced with a proposed NB I-5 on-ramp from Bridger Road. A new alignment for the proposed NB I-5 on-ramp from Bridger Road is required. Portion of Avenida de la Carlota will also be reconstructed. This work will also require modification to existing drainage culverts and relocation of any utilities in conflict with the proposed work. There will be retaining walls/sound walls constructed as necessary. The construction of the proposed project will require traffic and pedestrian detours, equipment staging areas, right-of-way acquisition including temporary easements, as well as ground disturbance and the removal of vegetation and trees. (See Figure A-3).

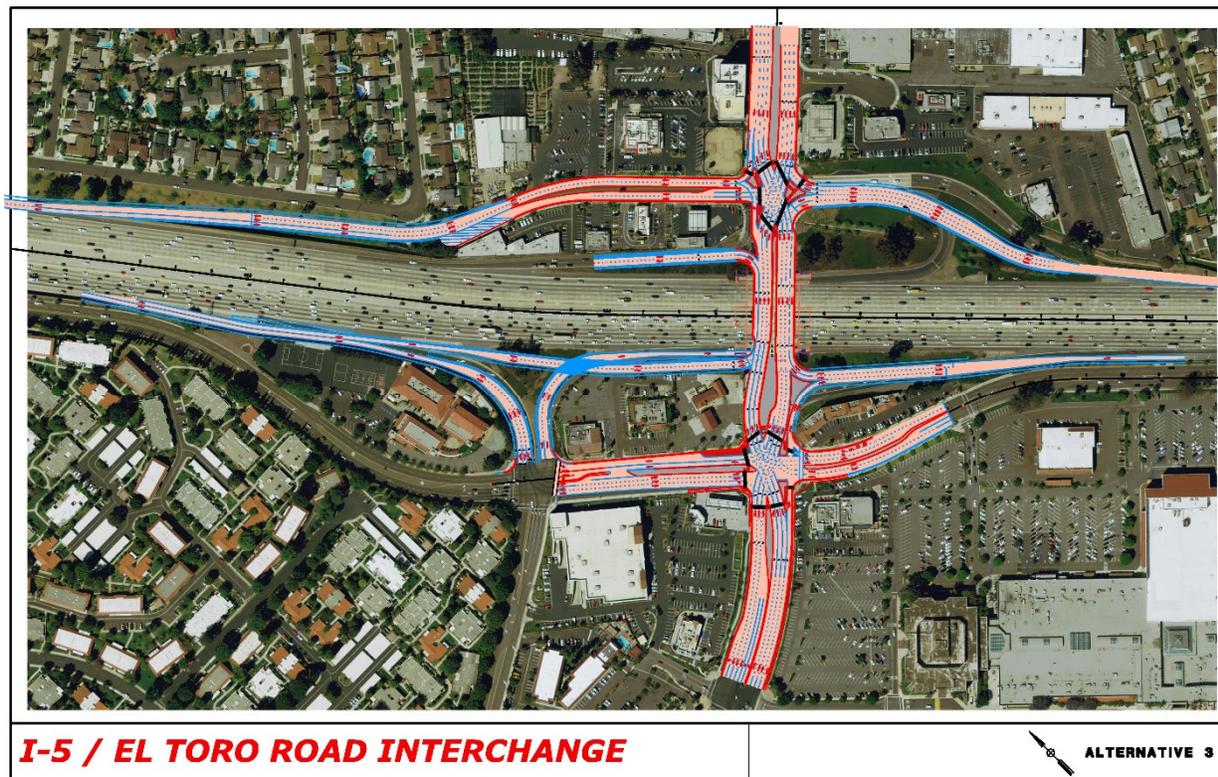
Figure A-3: Alternative 2



Alternative 3: SB I-5 Off-Ramp Spilt with Divergent Signal Interchanges

Alternative 3 proposes to reconfigure the I-5/El Toro Road Interchange to a Diverging Diamond Interchange (DDI), where traffic on El Toro Road will be shifted to the left side of the road between the signalized crossover intersections. Construction will include reconfiguring all four quadrants of the interchange and constructing a bridge tunnel at the new proposed SB off-ramp to EB El Toro Road. Existing NB I-5 on-ramp from El Toro Road will be modified for EB El Toro Road traffic to NB I-5. A new NB I-5 onramp from Bridger Road will also be proposed. Bridger Road will be reconstructed to accommodate the proposed NB I-5 on ramp, and a continuous median left turn lane will also be proposed for local business to access from Bridger Road (same as Alternative 1). Existing NB I-5 loop on-ramp will be eliminated. Existing NB I-5 off-ramp and existing SB I-5 hook on-ramp will be reconstructed. Modifications to Avenida De La Carlota will also be required. This work will also require modification to existing drainage culverts and relocation of any utilities in conflict with the proposed improvements. Retaining walls/sound walls will be recommended as necessary. The construction of the proposed project will require traffic and pedestrian detours, equipment staging areas, right-of-way acquisition including temporary easements, as well as ground disturbance and the removal of vegetation and trees. (See Figure A-4).

Figure A-4: Alternative 3



Alternative 4: Collector-Distributor for the SB I-5 On-Off Ramps

Alternative 4 proposes a new hook style (type L-6) interchange with proposed on- and off- ramps to Avenida de la Carlota, which will utilize the Laguna Hills Mall parking area along with a new signalized intersection. This alternative also proposes a SB collector distributor (CD) system beginning at the existing SB off-ramp to El Toro Road and ending at Los Alisos Boulevard Overcrossing. Existing El Toro Road Undercrossing Bridge will be widened, and the existing SB hook on- and off-ramps from Avenida de la Carlota adjacent to Laguna Hills Mall will be realigned in order to accommodate the proposed CD road and the proposed SB I-5 hook on- and off-ramps south of El Toro Road. The existing SB I-5 on-ramp at El Toro Road will be eliminated. The existing NB I-5 on-ramp from WB El Toro Road will be realigned and extended to connect to the existing auxiliary lane. The existing NB I-5 loop on-ramp from EB El Toro Road will also be extended to connect to the existing auxiliary lane. Bridger Road Cul de sac will be modified to accommodate the extension of NB I-5 onramp from WB El Toro Road. The improvement will also require modification to existing drainage culverts and relocation of any utilities in conflict with the proposed work. There will be retaining walls/sound walls constructed as necessary. The construction of the proposed project will require traffic and pedestrian detours, equipment staging areas, right-of-way acquisition including temporary easements, as well as ground disturbance and the removal of vegetation and trees. (See Figure A-5).

Figure A-5: Alternative 4



2.0 TRAFFIC VOLUME DEVELOPMENT

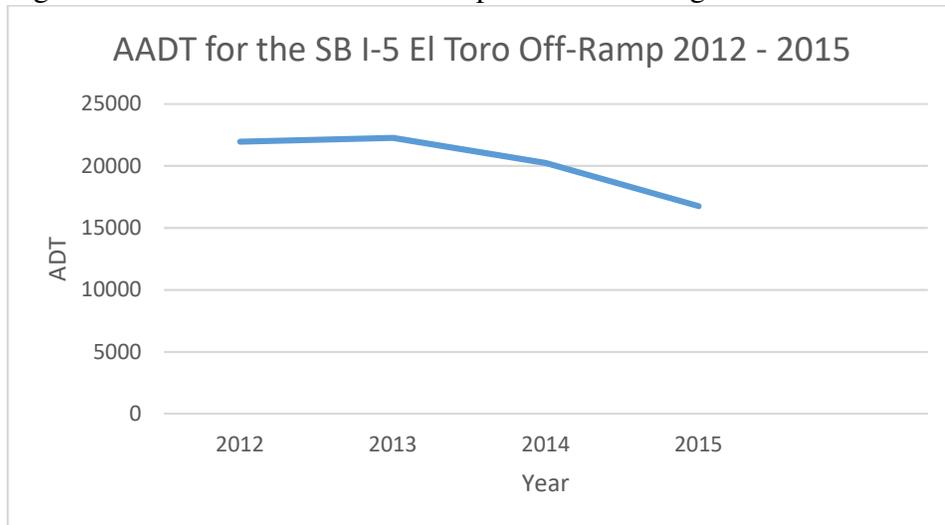
2.1 Existing Freeway Traffic Volumes

Existing traffic volumes provide a baseline to evaluate current performance of the circulation system and are used as the future forecast volumes through the post-processing routine. An existing traffic profile has been developed to represent current traffic volume conditions throughout the interchange.

AM, Midday and PM peak period intersection turning movement counts were collected for the study area ramp/local street intersections and other intersections that will be impacted by the proposed alternatives. AM, Midday and PM count periods were 6 a.m. to 9 a.m., 11 a.m. to 1 p.m. and 3 p.m. to 6 p.m., respectively. Ramp and intersection turning movement volumes were collected on typical weekdays (Tuesday – Thursday) in May and June 2017. Turning movement volumes at each study intersection have been adjusted where appropriate to ensure conservation of flow through the arterials. **Appendix A** presents the existing turning movement volume exhibit at the effected arterial and arterial ramp intersections.

It should be noted that the Laguna Hills Mall is currently under reconstruction (Five Lagunas Project) and the partial closure of the mall has impacted traffic patterns throughout the interchange. A decrease in the volume of traffic on the southbound I-5 off-ramp has occurred during the mall reconstruction. This can be reflected in the average annual daily traffic (AADT) of the off-ramp from 2012 to 2015 (Figure B-1).

Figure B-1: El Toro SB I-5 Off-Ramp Volumes during Mall Construction



These volumes are expected to increase upon the completion of the Five Lagunas project. This can be reflected in the Traffic Impact Analysis for the Five Lagunas project by Linscott,

Law & Greenspan, Engineers, which shows an increase in the SB I-5 off-ramp traffic volume making a left turn onto southbound Avenida de la Carlota at the completion of the reconstruction in 2018. To compensate for the variation in the traffic patterns during reconstruction, this report will analyze the proposed alternatives for the existing volume traffic, the opening year traffic in 2030 (to incorporate the traffic increase after the construction of the Five Lagunas project) and the design year traffic in 2050. Historical Trends were also analyzed to provide projected volumes.

For freeway volumes, an analysis of PeMS data was performed. The initial assessment performed looked at trends by month within the El Toro study area for Tuesdays to Thursdays only using PeMS data for the month of May 2017. Peak hour volumes were averaged over the analysis period and can be summarized in Tables 2-1.1 and 2-1.2.

The annual average daily traffic (AADT) on the I-5 mainline through the El Toro interchange has been fairly consistent over the past 5 years (within 1%) with an AADT average of 354,900.

Peak hour and daily traffic volumes for freeway general purpose (GP) and high occupancy vehicle (HOV) lanes were extracted from the Caltrans Performance Monitoring System (PeMS) for Tuesday to Thursday during the month of May 2017. May represented the most current data for “typical” months when the analysis was performed. Data was filtered and only data with 100% detector health was used.

The PeMS raw traffic volumes used in Table 2-1.1 and Table 2-1.2 where flow was conserved as appropriate between Lake Forest Drive and Alicia Parkway by adding and subtracting ramp volumes and mainline volumes by direction in order to generate representative flow conserved volumes by direction through the study area as a whole.

Table 2-1.1 and Table 2-1.2 present the flow conserved existing conditions traffic volume profile on the I-5 for the project study area that should be incorporated into the Environmental Document as the basis for existing conditions traffic analysis. Appendix B includes exhibits presenting freeway mainline and ramp volumes. The freeway on and off ramps included in the study area are listed below:

Northbound I-5:

El Toro NB I-5 off-ramp
El Toro NB I-5 (Loop) on-ramp from EB El Toro Rd
El Toro NB I-5 (Tangent) on-ramp from WB El Toro Rd

Southbound I-5:

Lake Forest SB I-5 (Loop) on-ramp from WB Lake Forest Dr
Lake Forest SB I-5 on-ramp from EB Lake Forest Rd
El Toro/Avenida Carlota SB I-5 Off-Ramp

El Toro/Avenida Carlota SB I-5 (Hook) On-Ramp from WB El Toro Rd/Avenida Carlota
El Toro SB I-5 (Tangent) on-ramp from EB El Toro Rd

Table 2-1.3 presents the existing truck volumes percentages taken from the Caltrans Traffic Census Data for northbound and southbound I-5 throughout the study area.

TABLE 2-1.1: I-5 NORTHBOUND MAINLINE EXISTING VOLUMES

I-5 Northbound												
			AM SPEED		PM SPEED		GP PEAK HOUR FLOW			HOV PEAK HOUR FLOW		
	Location	Type	GP	HOV	GP	HOV	AM	PM	ADT	AM	PM	ADT
ID	South End											
1	Alicia Pkwy to El Toro Rd	ML	49.6	63.1	63.0	64.7	11,649	9,415	147,932	1,737	1,273	21,016
2	El Toro Rd Off-Ramp	Ramp					945	1,245	14,907			
3	El Toro Rd OC	ML	54.7	48.9	51.6	57.1	10,475	8,061	125,979	1,966	1,382	28,062
4	El Toro Rd Loop On-Ramp from EB El Toro Rd	Ramp					801	960	17,085			
5	El Toro Rd Tan On-Ramp from WB El Toro Rd	Ramp					1,242	720	16,752			
6	El Toro to Lake Forest Dr	ML	ND	ND	ND	ND	12,539	9,451	166,703	1,945	1,672	21,175
	North End											

TABLE 2-1.2: I-5 SOUTHBOUND MAINLINE EXISTING VOLUMES

I-5 Southbound												
ID	Location	Type	AM SPEED		PM SPEED		GP PEAK HOUR FLOW			HOV PEAK HOUR FLOW		
			GP	HOV	GP	HOV	AM	PM	ADT	AM	PM	ADT
North End												
1	Lake Forest Dr OC	ML	63.1	64.3	29.4	54.5	8,915	9,914	140,011	1,231	2,083	24,432
2	Lake Forest Dr Loop On-Ramp	Ramp					405	582	12,920			
3	Lake Forest Dr Tangent On Ramp	Ramp					210	529	13,911			
4	Lake Forest Dr to El Toro Rd	ML	ND	ND	ND	ND	9,583	11,031	168,090	1,178	2,077	23,184
5	El Toro Rd Off-Ramp	Ramp					1,670	1,528	23,368			
6	El Toro Rd @ De La Carlota	ML	68.0	63.1	35.6	53.2	7,974	9,725	140,689	1,117	1,855	27,217
7	El Toro Rd On Ramp (From De La Carlota)	Ramp					723	803	13,571			
8	El Toro Rd Tangent On Ramp	Ramp					321	588	8,408			
9	El Toro Rd to Alicia Pkwy	ML	66.2	60.2	60.2	53.1	9,074	11,173	167,362	1,061	1,798	22,523
South End												

TABLE 2-1.3: I-5 NORTHBOUND AND SOUTHBOUND EXISTING TRUCK PERCENTAGES

Daily Truck Percentages		
Local Description	Southbound	Northbound
I-5 between Alicia Pkwy and Lake Forest	3.6%	3.4%

As Table 2-1.1 indicates the AM peak period is the more congested period in the northbound direction. The maximum throughput on the mainline occurring between 6:00 AM to 7:00 AM, where the peak congestion occurs between 7:00 AM and 8:00 AM (reflected in the lower speeds). PeMS data does not account for traffic demand indicating a lighter volume than is actually present during the afternoon peak period. The maximum throughput occurs after the demand exceeds capacity when the freeway speeds are the slowest.

As Table 2-1.2 shows the PM peak period is the more congested period in the southbound direction. The maximum throughput on the mainline occurs from 3:00 PM to 4:00 PM, where the peak congestion occurs between 4:00 PM and 5:00 PM. After 4:00 PM, traffic speeds begin to progressively decrease on the southbound mainline as traffic begins to break down, where the through demand on the SB I-5 mainline exceeds the freeway capacity.

2.2 Existing Arterial Traffic Volumes

One of the main features of the project is the redistribution of traffic volumes exiting the southbound (SB) I-5 El Toro Road off-ramp that are continuing (EB) on El Toro Road. All of the proposed project Alternatives redistribute the SB I-5 El Toro off-ramp traffic to mitigate traffic congestion and queueing onto the I-5 southbound mainline at the intersection of Avenida De La Carlota and Paseo De Valencia (SB I-5 El Toro off-ramp).

An analysis has been made to evaluate the existing traffic intersections throughout the study area to determine existing traffic patterns that will be impacted by any recommended improvement alternatives. The study area for local arterials included El Toro Road, Avenida De La Carlota, Bridger Road, Rockfield Boulevard, Paseo De Valencia and Los Alisos Boulevard. Six major intersections were studied to determine the existing conditions that would be affected by the proposed alternatives. These intersections include:

- Avenida De La Carlota and Paseo De Valencia (SB I-5 On/Off-Ramp)
- El Toro Road and Avenida De La Carolta
- El Toro Road and Bridger Road (NB I-5 On/Off-Ramp)
- El Toro Road and Rockfield Boulevard
- El Toro Road and Paseo De Valencia
- Avenida De La Carlota and Los Alisos Boulevard

Intersection traffic counts were performed at the above intersections in the month of May 2017 during the week (Tuesday through Thursday) to represent typical daily commuter traffic. AM and PM peak hour counts were conducted from 6:00 AM to 9:00 AM and

3:00 PM to 6:00 PM. Midday intersection traffic counts were also conducted between 11:00 AM and 1:00 PM.

There may also be consideration of additional alternatives that would widen the study area above. Additional intersection analysis may be required with the addition of other alternatives to determine a complete analysis of the proposed alternative and the impacts of the surrounding areas.

Table 2-2.1 shows the existing arterial intersection peak hour traffic volumes and turning movements for the intersections included in the study area. This table includes AM, Mid-Day and PM peak hour traffic volumes. Appendix C shows graphic illustrations of the intersection peak hour volumes and turning movements.

Table 2-2.1 shows that the intersection volumes have the highest demands during the Mid-Day and PM peak hours.

TABLE 2-2.1: EXISTING ARTERIAL PEAK HOUR INTERSECTION VOLUME

AM Peak Hour Data - Existing															
ID	North-South Street	East-West Street	Existing (2017) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/ Paseo De Valencia	4	362	522	166	185	101	120	35	14	909	708	53	3179
2	Avenida Carlota	El Toro Rd	24	102	300	765	258	85	0	969	15	112	956	786	4372
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	498	46	401	51	4	222	84	828	801	0	2376	108	5419
4	Rockfield Blvd	El Toro Rd	465	267	74	66	185	170	259	866	155	166	1849	69	4591
5	Paseo De Valencia	El Toro Rd	192	80	146	21	490	302	81	814	149	280	534	8	3097
6	Avenida Carlota	Los Alisos Blvd	5	19	9	219	13	56	216	667	3	8	744	180	2139
Mid-Day Peak Hour Data - Existing															
ID	North-South Street	East-West Street	Existing (2017) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/ Paseo De Valencia	35	403	575	130	419	136	176	84	88	1167	394	109	3716
2	Avenida Carlota	El Toro Rd	58	168	461	985	524	165	0	1412	46	305	1061	845	6030
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	679	53	623	99	11	259	175	1473	765	0	2168	137	6442
4	Rockfield Blvd	El Toro Rd	390	161	51	252	239	259	605	1413	177	135	1656	197	5535
5	Paseo De Valencia	El Toro Rd	310	178	381	53	341	171	147	855	147	336	697	23	3639
6	Avenida Carlota	Los Alisos Blvd	1	8	3	332	12	162	195	462	2	5	434	270	1886
PM Peak Hour Data- Existing															
ID	North-South Street	East-West Street	Existing (2017) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/ Paseo De Valencia	44	305	487	248	699	330	169	68	54	1048	438	44	3934
2	Avenida Carlota	El Toro Rd	51	83	541	1001	646	154	0	1702	69	256	947	750	6200
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	523	53	669	110	5	211	137	1589	960	0	1939	107	6303
4	Rockfield Blvd	El Toro Rd	330	204	92	304	532	242	568	1649	151	189	1474	73	5808
5	Paseo De Valencia	El Toro Rd	405	196	386	47	575	222	75	1045	161	326	664	20	4122
6	Avenida Carlota	Los Alisos Blvd	6	8	11	608	19	202	197	845	5	8	693	256	2858

3.0 Traffic Forecasting Methodology

The Orange County Transportation Analysis Model (OCTAM) version 4.0 was used to develop traffic forecasts for this project. The baseline future year network consists of the Constrain (Buildout) Network. Traffic forecasts were developed using the difference methodology outlined in the National Cooperative Highway Research Program Report (NCHRP) 255 published by the Transportation Research Board (TRB). Annual growth calculated from the 2012 Base Year and 2040 Future Year models was applied to 2017 traffic counts to develop the traffic forecasts for 2030 (Opening Year) and 2050 (Design Year), with any negative growth adjusted to zero. To increase localized accuracy, 2030 and 2050 forecast ramp volumes and HOV volumes were added or subtracted from upstream mainline volumes, as appropriate.

3.1 Future Freeway Traffic Volumes

Directional volume forecasts for mainline GP lanes, HOV lanes, and ramp forecasts are reported between Lake Forest Drive and Alicia Parkway for the AM and PM Peak Hour periods. As OCTAM outputs are for the peak period, conversion factors of 0.3566 and 0.2662, were applied to generate the AM and PM Peak Hour forecasts, respectively.

Table 3-1.1 and Table 3-1.2 shows the projected 2030 opening year traffic volumes for the northbound and southbound I-5 mainline, High Occupancy Vehicle (HOV) lane and on/off ramps throughout the project area based on the forecasting methodology listed in Section 3.0.

Table 3-1.3 and Table 3-1.4 shows the projected 2050 design year traffic volumes for the northbound and southbound I-5 mainline and on/off ramps throughout the project area based on the forecasting methodology.

TABLE 3-1.1: I-5 NORTHBOUND MAINLINE 2030 VOLUMES

Northbound I-5			2030 GP			2030 HOV		
	Location	Type	AM	PM	ADT	AM	PM	ADT
ID	South End							
1	Alicia Pkwy to El Toro Rd	ML	11,893	9,874	159,607	2,120	1,493	24,271
2	El Toro Rd Off-Ramp	Ramp	1,022	1,284	15,253			
3	El Toro Rd OC	ML	10,727	8,472	133,423	2,265	1,541	30,203
4	El Toro Rd Loop On-Ramp from EB El Toro Rd	Ramp	818	974	17,341			
5	El Toro Rd Tan On-Ramp from WB El Toro Rd	Ramp	1,251	725	16,877			
6	El Toro to Lake Forest Dr	ML	12,896	9,934	174,945	2,164	1,779	22,898
	North End							

TABLE 3-1.2: I-5 SOUTHBOUND MAINLINE 2030 VOLUMES

Southbound I-5			2030 GP			2030 HOV		
	Location	Type	AM	PM	ADT	AM	PM	ADT
ID	North End							
1	Lake Forest Dr OC	ML	9,235	10,343	149,468	1,250	2,309	26,212
2	Lake Forest Dr Loop On-Ramp	Ramp	465	595	13,217			
3	Lake Forest Dr Tangent On Ramp	Ramp	224	564	14,231			
4	Lake Forest Dr to El Toro Rd	ML	9,957	11,417	177,688	1,217	2,395	25,440
5	El Toro Rd Off-Ramp	Ramp	1,709	1,594	23,913			
6	El Toro Rd @ De La Carlota	ML	8,309	10,045	149,742	1,156	2,173	29,473
7	El Toro Rd On Ramp (From De La Carlota)	Ramp	762	898	14,165			
8	El Toro Rd On Tangent On Ramp	Ramp	349	578	8,438			
9	El Toro Rd to Alicia Pkwy	ML	9,464	11,585	177,094	1,112	2,109	24,724
	South End							

TABLE 3-1.3: I-5 NORTHBOUND MAINLINE 2050 VOLUMES

Northbound I-5			2050 GP			2050 HOV		
	Location	Type	AM	PM	ADT	AM	PM	ADT
ID	South End							
1	Alicia Pkwy to El Toro Rd	ML	12,269	10,580	167,415	2,709	1,654	26,741
2	El Toro Rd Off-Ramp	Ramp	1,096	1,345	15,785			
3	El Toro Rd OC	ML	11,158	9,102	144,875	2,724	1,786	33,497
4	El Toro Rd Loop On-Ramp from EB El Toro Rd	Ramp	837	996	17,734			
5	El Toro Rd Tan On-Ramp from WB El Toro Rd	Ramp	1,265	734	17,069			
6	El Toro to Lake Forest Dr	ML	13,483	10,839	187,625	2,502	1,943	25,549
	North End							

TABLE 3-1.4: I-5 SOUTHBOUND MAINLINE 2050 VOLUMES

Southbound I-5								
ID	Location	Type	2050 GP			2050 HOV		
			AM	PM	ADT	AM	PM	ADT
	North End							
1	Lake Forest Dr OC	ML	9,727	11,004	167,017	1,279	2,656	28,950
2	Lake Forest Dr Loop On-Ramp	Ramp	558	611	13,566			
3	Lake Forest Dr Tangent On Ramp	Ramp	245	619	14,607			
4	Lake Forest Dr to El Toro Rd	ML	10,531	12,007	192,229	1,278	2,883	28,911
5	El Toro Rd Off-Ramp	Ramp	1,764	1,691	24,751			
6	El Toro Rd @ De La Carlota	ML	8,828	10,538	163,445	1,217	2,661	32,944
7	El Toro Rd On Ramp (From De La Carlota)	Ramp	823	1,045	15,079			
8	El Toro Rd On Tangent On Ramp	Ramp	392	608	8,483			
9	El Toro Rd to Alicia Pkwy	ML	10,069	12,264	191,841	1,191	2,588	28,111
	South End							

3.2 Future Arterial Traffic Volumes

Intersection turning movement forecasts are reported at six locations for the AM Peak Hour, MD Peak Hour, and PM Peak Hour. As OCTAM outputs are for peak periods rather than peak hour, conversion factors of .3566, .2622, and 0.19 were applied to generate the AM, MD, and PM Peak Hour forecasts, respectively.

Tables 3-2.1 and 3-2.2 shows the projected 2030 and 2050 turning movements for the arterial intersections within the study area based on the forecasting methodology in Section 3.0.

TABLE 3-2.1: NO BUILD 2030 ARTERIAL PEAK HOUR INTERSECTION VOLUME

AM Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/Paseo De Valencia	4	369	536	188	188	103	128	38	14	923	726	60	3277
2	Avenida Carlota	El Toro Rd	26	104	300	770	263	92	0	1109	16	115	1205	805	4805
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	568	46	408	51	4	222	92	924	814	0	2586	108	5823
4	Rockfield Blvd	El Toro Rd	518	275	75	66	187	188	284	931	168	166	1988	69	4915
5	Paseo De Valencia	El Toro Rd	198	86	149	22	494	317	85	833	149	300	601	9	3243
6	Avenida Carlota	Los Alisos Blvd	5	19	9	220	13	57	216	680	3	8	795	186	2211
Mid-Day Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/Paseo De Valencia	36	413	577	131	438	141	182	85	93	1195	401	110	3802
2	Avenida Carlota	El Toro Rd	62	176	461	1001	546	179	0	1459	50	305	1082	850	6171
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	679	53	634	100	11	259	175	1514	783	0	2222	139	6569
4	Rockfield Blvd	El Toro Rd	410	172	54	258	253	261	618	1443	187	144	1690	204	5694
5	Paseo De Valencia	El Toro Rd	310	185	394	56	350	172	151	890	147	340	704	24	3723
6	Avenida Carlota	Los Alisos Blvd	1	8	3	336	12	166	200	467	2	5	443	276	1919
PM Peak Hour Data -2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/Paseo De Valencia	44	310	529	293	702	333	176	76	54	1087	457	50	4111
2	Avenida Carlota	El Toro Rd	52	84	548	1029	659	155	0	1776	73	269	985	799	6429
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	543	53	688	110	5	226	138	1668	969	0	2009	107	6516
4	Rockfield Blvd	El Toro Rd	330	204	92	304	532	242	568	1747	151	189	1544	73	5976
5	Paseo De Valencia	El Toro Rd	409	201	393	48	579	226	80	1129	170	332	685	21	4273
6	Avenida Carlota	Los Alisos Blvd	6	8	11	627	19	209	202	862	5	8	708	262	2927

TABLE 3-2.2: NO BUILD 2050 ARTERIAL PEAK HOUR INTERSECTION VOLUME

AM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/ Paseo De Valencia	4	383	557	225	192	106	139	41	14	948	745	71	3425
2	Avenida Carlota	El Toro Rd	29	105	300	783	269	102	0	1310	16	119	1555	839	5427
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	647	46	403	51	4	222	102	1066	833	0	2909	108	6391
4	Rockfield Blvd	El Toro Rd	600	287	76	67	189	218	323	1031	185	166	2199	69	5410
5	Paseo De Valencia	El Toro Rd	208	91	153	23	494	338	92	854	149	330	705	11	3448
6	Avenida Carlota	Los Alisos Blvd	5	19	9	221	13	58	216	700	3	9	874	194	2321
Mid-Day Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/ Paseo De Valencia	38	425	580	132	468	148	188	86	99	1238	407	110	3919
2	Avenida Carlota	El Toro Rd	70	190	461	1023	578	204	0	1531	57	305	1110	853	6382
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	679	53	643	102	11	259	175	1576	804	0	2298	140	6740
4	Rockfield Blvd	El Toro Rd	439	189	59	265	274	264	641	1478	202	157	1735	213	5916
5	Paseo De Valencia	El Toro Rd	310	191	412	61	359	173	156	946	147	347	717	26	3845
6	Avenida Carlota	Los Alisos Blvd	1	8	3	341	12	169	204	474	2	5	458	285	1962
PM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/ Paseo De Valencia	44	318	591	367	706	334	185	87	54	1148	482	61	4377
2	Avenida Carlota	El Toro Rd	53	85	555	1070	680	158	0	1890	79	290	1044	868	6772
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	572	53	720	112	5	236	139	1777	991	0	2128	107	6840
4	Rockfield Blvd	El Toro Rd	349	204	92	320	605	272	613	1818	178	201	1614	73	6339
5	Paseo De Valencia	El Toro Rd	409	218	403	50	583	230	87	1258	184	345	716	21	4504
6	Avenida Carlota	Los Alisos Blvd	6	8	11	658	19	222	208	886	5	8	729	268	3028

4.0 Opening Year 2030 Forecast Traffic Volumes

This section summarizes the Opening Year (2030) forecast traffic volumes for all Project Alternatives.

4.1 Opening Year 2030 Forecast Volumes: No Build

Utilizing the methodologies described in **Section 3.0**, the resulting opening year 2030 No Build Alternative volumes for the mainline are reflected in **Table 3-1.1** & **Table 3-1.2** and presented graphically in **Appendix B**.

The opening year 2030 No Build Alternative 1 volumes for the local arterials are the same as those reflected in **Table 3-2.1** and presented graphically in **Appendix A**.

4.2 Opening Year 2030 Forecast Volumes: Alternative 1 - Modify SB Direction to Type L-9 Interchange

The 2030 forecast peak hour volumes for Alternative 1 for the I-5 mainline general purpose and HOV for the northbound and southbound directions are reflected in **Table 4-1.1** and **Table 4-1.2** and presented graphically in **Appendix B**.

Utilizing the methodologies described in **Section 3.0**, the resulting opening year 2030 Alternative 1 volumes for the local arterials are summarized in **Table 4-1.3** and presented graphically in **Appendix A**.

TABLE 4-1.1: ALTERNATIVE 1 NORTHBOUND I-5 MAINLINE OPENING YEAR 2030 VOLUMES

Northbound I-5								
Location		Type	2030 GP			2030 HOV		
ID			AM	PM	ADT	AM	PM	ADT
	South End							
1	Alicia Pkwy to El Toro Rd	ML	11,893	9,874	155,607	2,120	1,423	23,271
2	El Toro Rd Off-Ramp	Ramp	1,022	1,284	15,253			
3	El Toro Rd OC	ML	10,727	8,472	133,423	2,265	1,541	30,203
4	El Toro Rd Loop On-Ramp from EB El Toro Rd	Ramp	818	974	17,341			
5	El Toro Rd Tan On-Ramp from WB El Toro Rd	Ramp	1,251	725	16,877			
6	El Toro to Lake Forest Dr	ML	12,896	9,934	174,945	2,164	1,779	22,898
	North End							

TABLE 4-1.2: ALTERNATIVE 1 SOUTHBOUND I-5 MAINLINE OPENING YEAR 2030 VOLUMES

Southbound I-5								
			2030 GP			2030 HOV		
	Location	Type	AM	PM	ADT	AM	PM	ADT
ID	North End							
1	Lake Forest Dr OC	ML	9,235	10,343	149,468	1,250	2,309	26,212
2	Lake Forest Dr Loop On-Ramp	Ramp	465	595	13,217			
3	Lake Forest Dr Tangent On Ramp	Ramp	224	564	14,231			
4	Lake Forest Dr to El Toro Rd	ML	9,957	11,417	177,688	1,217	2,395	25,440
5	El Toro Rd Off-Ramp	Ramp	1,709	1,594	23,913			
6	El Toro Rd @ De La Carlota	ML	8,309	10,045	149,742	1,156	2,173	29,473
7	El Toro Rd On Ramp (From De La Carlota)	Ramp	556	528	9,351			
8	El Toro Rd Tangent On Ramp	Ramp	556	948	13,252			
9	El Toro Rd to Alicia Pkwy	ML	9,464	11,585	177,094	1,112	2,109	24,724
	South End							

TABLE 4-1.3: OPENING YEAR 2030 FORECAST VOLUMES: ALTERNATIVE 1 - ARTERIAL PEAK HOUR INTERSECTION VOLUME

AM Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/Paseo De Valencia	0	0	556	0	0	479	500	0	0	1649	0	60	3244
2	Avenida Carlota	El Toro Rd	137	0	300	648	206	795	0	1438	112	115	1474	536	5761
3	I-5 NB Ramps/Bridger Rd	El Toro Rd	568	46	408	51	0	226	92	924	814	0	1343	1351	5823
4	Rockfield Blvd	El Toro Rd	518	275	75	66	187	188	284	931	168	166	1988	69	4915
5	Paseo De Valencia	El Toro Rd	198	32	200	372	53	54	85	833	149	771	936	421	4104
6	Avenida Carlota	Los Alisos Blvd	5	19	9	220	13	57	216	680	3	8	795	186	2211
Mid-Day Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/Paseo De Valencia	0	0	577	0	0	699	728	0	0	1596	0	110	3710
2	Avenida Carlota	El Toro Rd	242	0	461	812	263	521	0	1880	223	305	1510	577	6794
3	I-5 NB Ramps/Bridger Rd	El Toro Rd	679	53	634	100	11	259	175	1530	783	0	1314	1047	6585
4	Rockfield Blvd	El Toro Rd	410	172	54	258	253	261	618	1443	187	144	1690	204	5694
5	Paseo De Valencia	El Toro Rd	310	51	526	562	70	70	151	890	147	616	803	525	4721
6	Avenida Carlota	Los Alisos Blvd	1	8	3	336	12	166	200	467	2	5	443	276	1919
PM Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/Paseo De Valencia	0	0	528	0	0	1328	556	0	0	1544	0	50	4006
2	Avenida Carlota	El Toro Rd	137	0	548	714	282	548	0	2580	359	269	1257	517	7211
3	I-5 NB Ramps/Bridger Rd	El Toro Rd	543	53	688	110	0	231	138	1776	969	0	1285	831	6624
4	Rockfield Blvd	El Toro Rd	330	204	92	304	532	242	621	1747	151	189	1544	73	6029
5	Paseo De Valencia	El Toro Rd	409	104	490	985	172	172	80	1129	170	739	649	375	5474
6	Avenida Carlota	Los Alisos Blvd	6	8	11	627	19	209	202	862	5	8	708	262	2927

4.3 Opening Year 2030 Forecast Volumes: Alternative 2 – Direct Flyover to Bridger Road

The northbound I-5 mainline forecast for the Opening Year 2030 Alternative 2 are shown in **Table 4-2.1**. The forecast southbound I-5 mainline with the added eastbound El Toro off-ramp are reflected in **Table 4-2.2** for Opening Year 2030 and shown graphically in **Appendix B**.

Utilizing the methodologies described in **Section 3.0**, the resulting Opening Year 2030 Alternative 2 volumes for the local arterials are summarized in **Table 4-2.3** and presented graphically in **Appendix A**.

TABLE 4-2.1: ALTERNATIVE 2 NORTHBOUND I-5 MAINLINE OPENING YEAR 2030 VOLUMES

Northbound I-5								
Northbound I-5			2030 GP			2030 HOV		
ID	Location	Type	AM	PM	ADT	AM	PM	ADT
	South End							
1	Alicia Pkwy to El Toro Rd	ML	11,893	9,874	155,607	2,120	1,423	23,271
2	El Toro Rd Off-Ramp	Ramp	1,022	1,284	15,253			
3	El Toro Rd OC	ML	10,727	8,472	133,423	2,265	1,541	30,203
4	El Toro Rd Loop On-Ramp from EB El Toro Rd	Ramp	818	974	17,341			
5	El Toro Rd Proposed Tangent On-Ramp from Bridger Rd	Ramp	1,251	725	16,877			
6	El Toro to Lake Forest Dr	ML	12,896	9,934	174,945	2,164	1,779	22,898
	North End							

TABLE 4-2.2: ALTERNATIVE 2 SOUTHBOUND I-5 MAINLINE OPENING YEAR 2030 VOLUMES

Southbound I-5								
Southbound I-5			2030 GP			2030 HOV		
Location		Type	AM	PM	ADT	AM	PM	ADT
ID	North End							
1	Lake Forest Dr OC	ML	9,235	10,343	149,468	1,250	2,309	26,212
2	Lake Forest Dr Loop On-Ramp	Ramp	465	595	13,217			
3	Lake Forest Dr Tangent On Ramp	Ramp	224	564	14,231			
4	Lake Forest Dr to El Toro Rd	ML	9,957	11,417	177,688	1,217	2,395	25,440
5	El Toro Rd Off-Ramp (WB)	Ramp	1,025	843	14,348			
6	El Toro Rd Proposed Flyover Off-Ramp (EB)	Ramp	684	751	9,565			
7	El Toro Rd @ De La Carlota	ML	8,309	10,045	149,742	1,156	2,173	29,473
8	El Toro Rd On Ramp (From De La Carlota)	Ramp	762	898	14,165			
9	El Toro Rd On Tangent On Ramp	Ramp	349	578	8,438			
10	El Toro Rd to Alicia Pkwy	ML	9,464	11,585	177,094	1,112	2,109	24,724
	South End							

TABLE 4-2.3 OPENING YEAR 2030 FORECAST VOLUMES: ALTERNATIVE 2 - ARTERIAL PEAK HOUR INTERSECTION VOLUME

AM Peak Hour Data - 2030														
North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes											Total Approach Volume	
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT		WBR
Avenida Carlota	I-5 SB Ramps/Paseo De Valencia	4	369	536	188	188	103	128	38	14	245	720	60	2593
Avenida Carlota	El Toro Rd	26	104	300	131	263	92	0	1109	16	115	1205	805	4166
I-5 NB Ramps/Bridger Rd	El Toro Rd	568	0	455	651	0	33	0	377	814	0	1562	1251	5711
Rockfield Blvd	El Toro Rd	518	275	75	66	187	307	403	931	168	166	1988	69	5153
Paseo De Valencia	El Toro Rd	198	86	149	22	494	317	85	833	149	300	601	9	3243
Avenida Carlota	Los Alisos Blvd	5	19	9	220	13	57	216	680	3	8	795	186	2211
Mid-Day Peak Hour Data - 2030														
North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes											Total Approach Volume	
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT		WBR
Avenida Carlota	I-5 SB Ramps/Paseo De Valencia	36	413	577	131	438	141	182	85	93	353	401	110	2960
Avenida Carlota	El Toro Rd	62	176	461	235	546	179	0	1459	50	305	1082	850	5405
I-5 NB Ramps/Bridger Rd	El Toro Rd	679	0	687	802	0	40	0	912	794	0	1576	923	6413
Rockfield Blvd	El Toro Rd	410	172	54	258	253	399	771	1443	187	144	1690	204	5985
Paseo De Valencia	El Toro Rd	310	185	394	56	350	172	151	890	147	340	704	24	3723
Avenida Carlota	Los Alisos Blvd	1	8	3	336	12	166	200	467	2	5	443	276	1919
PM Peak Hour Data - 2030														
North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes											Total Approach Volume	
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT		WBR
Avenida Carlota	I-5 SB Ramps/Paseo De Valencia	44	310	529	293	702	333	176	76	54	336	457	50	3360
Avenida Carlota	El Toro Rd	52	84	548	322	659	155	0	1776	73	269	985	799	5722
I-5 NB Ramps/Bridger Rd	El Toro Rd	541	0	743	715	0	36	0	1094	974	0	1498	725	6326
Rockfield Blvd	El Toro Rd	330	204	92	304	532	349	654	1747	151	189	1544	73	6169
Paseo De Valencia	El Toro Rd	409	201	393	48	579	226	80	1129	170	332	685	21	4273
Avenida Carlota	Los Alisos Blvd	6	8	11	627	19	209	202	862	5	8	708	262	2927

4.4 Opening Year 2030 Forecast Volumes: Alternative 3 – SB I-5 Off-Ramp Spilt with Divergent Signal Interchanges

The northbound I-5 mainline forecast for the Opening Year 2030 Alternative 3 are shown in **Table 4-3.1**. The forecast southbound I-5 mainline for Alternative 3 are reflected in **Table 4-3.2** for Opening Year 2030 and shown graphically in **Appendix B**.

Utilizing the methodologies described in **Section 3.0**, the resulting opening year 2030 Alternative 3 volumes for the local arterials are summarized in **Table 4-3.3** and presented graphically in **Appendix A**.

TABLE 4-3.1: ALTERNATIVE 3 NORTHBOUND I-5 MAINLINE OPENING YEAR 2030 VOLUMES

Northbound I-5								
Northbound I-5			2030 GP			2030 HOV		
ID	Location	Type	AM	PM	ADT	AM	PM	ADT
South End								
1	Alicia Pkwy to El Toro Rd	ML	11,893	9,874	155,607	2,120	1,423	23,271
2	El Toro Rd Off-Ramp	Ramp	1,022	1,278	15,253			
3	El Toro Rd OC	ML	10,727	8,472	133,423	2,265	1,541	30,203
4	El Toro Rd Tan On-Ramp from WB El Toro Rd (Bridger Rd)	Ramp	1,251	725	16,877			
5	El Toro Rd Proposed Tangent On-Ramp from EB El Toro Rd	Ramp	818	974	17,341			
6	El Toro to Lake Forest Dr	ML	12,896	9,934	174,945	2,164	1,779	22,898
North End								

TABLE 4-3.2: ALTERNATIVE 3 SOUTHBOUND I-5 MAINLINE OPENING YEAR 2030 VOLUMES

Southbound I-5								
ID	Location	Type	2030 GP			2030 HOV		
			AM	PM	ADT	AM	PM	ADT
	North End							
1	Lake Forest Dr OC	ML	9,235	10,343	149,468	1,250	2,309	26,212
2	Lake Forest Dr Loop On-Ramp	Ramp	465	595	13,217			
3	Lake Forest Dr Tangent On Ramp	Ramp	224	564	14,231			
4	Lake Forest Dr to El Toro Rd	ML	9,957	11,417	177,688	1,217	2,395	25,440
5	El Toro Rd WB Off-Ramp to De La Carlota	Ramp	1,059	876	14,347			
6	El Toro Tangent EB off-Ramp to El Toro Rd	Ramp	650	718	9,566			
7	El Toro Rd @ De La Carlota	ML	8,309	10,045	149,742	1,156	2,173	29,473
8	El Toro Rd On Ramp (From De La Carlota)	Ramp	252	396	9,873			
9	El Toro Rd On Tangent On Ramp From EB & WB El Toro Rd	Ramp	859	1,080	14,230			
10	El Toro Rd to Alicia Pkwy	ML	9,464	11,585	177,094	1,112	2,109	24,724
	South End							

TABLE 4-3.3: OPENING YEAR 2030 FORECAST VOLUMES: ALTERNATIVE 3 - ARTERIAL PEAK HOUR INTERSECTION VOLUME

AM Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Off-Ramp	35	369	26	188	63	231	128	38	14	278	721	60	2151
2	Avenida Carlota	El Toro Rd	0	130	300	0	263	92	0	1233	16	115	1219	293	3661
3	I-5 SB Off-Ramp	El Toro Rd	0	0	0	650	0	0	0	1184	0	0	0	0	1834
4	I-5 NB Ramps	El Toro Rd	568	0	454	51	0	226	92	924	0	0	1343	1351	5009
5	Rockfield Blvd	El Toro Rd	518	275	75	66	187	188	330	931	168	166	1988	69	4961
6	Paseo De Valencia	El Toro Rd	198	86	149	151	494	342	85	833	149	300	576	9	3372
7	Avenida Carlota	Los Alisos Blvd	5	19	9	220	13	57	216	680	3	8	795	186	2211
Mid-Day Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Off-Ramp	94	413	25	131	238	341	182	85	93	384	401	110	2497
2	Avenida Carlota	El Toro Rd	0	238	461	0	546	179	0	1661	50	305	1123	272	4835
3	I-5 SB Off-Ramp	El Toro Rd	0	0	0	811	0	0	0	1673	0	0	0	0	2484
4	I-5 NB Ramps	El Toro Rd	679	0	687	100	0	259	175	1515	0	0	1314	1047	5776
5	Rockfield Blvd	El Toro Rd	410	172	54	258	253	261	672	1443	187	144	1690	204	5748
6	Paseo De Valencia	El Toro Rd	310	185	394	258	350	230	151	890	149	340	704	24	3985
7	Avenida Carlota	Los Alisos Blvd	1	8	3	336	12	166	200	467	2	5	443	276	1919
PM Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Off-Ramp	95	310	27	293	388	649	176	76	54	371	455	50	2944
2	Avenida Carlota	El Toro Rd	0	136	548	0	659	155	0	2097	73	269	989	294	5220
3	I-5 SB Off-Ramp	El Toro Rd	0	0	0	718	0	0	0	2067	0	0	0	0	2785
4	I-5 NB Ramps	El Toro Rd	543	0	741	110	0	226	138	1673	0	0	1285	831	5547
5	Rockfield Blvd	El Toro Rd	330	204	92	304	532	242	626	1747	151	189	1544	73	6034
6	Paseo De Valencia	El Toro Rd	409	201	393	375	579	245	80	1129	170	332	685	21	4619
7	Avenida Carlota	Los Alisos Blvd	6	8	11	627	29	317	202	862	3	8	708	271	3052

4.5 Opening Year 2030 Forecast Volumes: Alternative 4 – Collector-Distributor for SB I-5 On/Off-Ramps

The northbound I-5 mainline forecast for the Opening Year 2030 Alternative 4 are shown in **Table 4-4.1**. The forecast southbound I-5 mainline for Alternative 4 are reflected in **Table 4-4.2** for Opening Year 2030 and shown graphically in **Appendix B**.

Utilizing the methodologies described in **Section 3.0**, the resulting opening year 2030 Alternative 4 volumes for the local arterials are summarized in **Table 4-3.3** and presented graphically in **Appendix A**.

TABLE 4-4.1: ALTERNATIVE 4 NORTHBOUND I-5 MAINLINE OPENING YEAR 2030 VOLUMES

Northbound I-5								
ID	Location	Type	2030 GP			2030 HOV		
			AM	PM	ADT	AM	PM	ADT
South End								
1	Alicia Pkwy to El Toro Rd	ML	11,893	9,874	155,607	2,120	1,423	23,271
2	El Toro Rd Off-Ramp	Ramp	1,022	1,278	15,253			
3	El Toro Rd OC	ML	10,727	8,472	133,423	2,265	1,541	30,203
4	El Toro Rd Tan On-Ramp from WB El Toro Rd	Ramp	1,251	725	16,877			
5	El Toro Rd On-Ramp from EB El Toro Rd	Ramp	818	974	17,341			
6	El Toro to Lake Forest Dr	ML	12,896	9,934	174,945	2,164	1,779	22,898
North End								

TABLE 4-4.2: ALTERNATIVE 4 SOUTHBOUND I-5 MAINLINE OPENING YEAR 2030 VOLUMES

Southbound I-5			2030 GP			2030 HOV		
ID	Location	Type	AM	PM	ADT	AM	PM	ADT
	North End							
1	Lake Forest Dr OC	ML	9,235	10,343	149,468	1,250	2,309	26,212
2	Lake Forest Dr Loop On-Ramp	Ramp	465	595	13,217			
3	Lake Forest Dr Tangent On Ramp	Ramp	224	564	14,231			
4	Lake Forest Dr to El Toro Rd	ML	9,957	11,417	177,688	1,217	2,395	25,440
5	El Toro Rd WB Off-Ramp to De La Carlota (North of El Toro Road)	Ramp	840	564	23,913			
6	El Toro Rd Proposed Collector/Distributor (To El Toro proposed Off Ramp to De La Carlota South)	CD	869	1,030				
7	El Toro Rd @ De La Carlota	ML	8,309	10,045	149,742	1,156	2,173	29,473
8	El Toro Rd On-Ramp (From De La Carlota North)	Ramp	762	898	14,165			
9	El Toro Rd proposed On Ramp (From De La Carlota South)	Ramp	349	578	8,438			
10	El Toro Rd to Alicia Pkwy	ML	9,464	11,585	177,094	1,112	2,109	24,724
	South End							

TABLE 4-4.3: OPENING YEAR 2030 FORECAST VOLUMES: ALTERNATIVE 4 - ARTERIAL PEAK HOUR INTERSECTION VOLUME

AM Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Ave Carlota (North)	I-5 SB Off-Ramp	4	369	536	188	188	103	128	38	14	54	726	60	2408
2	Avenida Carlota	El Toro Rd	26	104	779	115	49	92	0	940	188	115	1205	805	4418
3	I-5 NB Ramps	El Toro Rd	568	46	408	51	0	226	92	924	814	0	2586	108	5823
4	Rockfield Blvd	El Toro Rd	518	275	75	66	187	188	284	931	168	166	1988	69	4915
5	Paseo De Valencia	El Toro Rd	198	86	149	22	494	317	85	833	149	300	601	9	3243
6	Ave Carlota (South)	Los Alisos Blvd	0	288	174	175	183	0	0	0	0	216	0	653	1689
7	Avenida Carlota	Los Alisos Blvd	5	19	9	220	13	57	216	680	3	8	795	186	2211
Mid-Day Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Ave Carlota (North)	I-5 SB Off-Ramp	36	413	577	131	438	141	182	85	93	51	401	110	2658
2	Avenida Carlota	El Toro Rd	62	176	976	235	168	179	0	1216	266	305	1082	850	5515
4	I-5 NB Ramps	El Toro Rd	679	53	643	102	0	259	175	1575	804	0	2298	140	6728
5	Rockfield Blvd	El Toro Rd	410	172	54	258	253	261	641	1443	187	144	1690	204	5717
6	Paseo De Valencia	El Toro Rd	310	185	394	56	350	172	151	890	147	340	704	24	3723
6	Ave Carlota (South)	I-5 SB Off-Ramp	0	446	225	224	579	0	0	0	0	343	0	802	2619
7	Avenida Carlota	Los Alisos Blvd	1	8	3	336	12	166	200	467	2	5	443	276	1919
PM Peak Hour Data - 2030															
ID	North-South Street	East-West Street	Opening Year (2030) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Ave Carlota (North)	I-5 SB Off-Ramp	44	310	529	293	702	333	176	76	54	57	457	50	3081
2	Avenida Carlota	El Toro Rd	52	84	977	332	336	155	0	1481	368	269	985	799	5838
4	I-5 NB Ramps	El Toro Rd	537	53	688	110	0	231	138	1668	974	0	2009	107	6515
5	Rockfield Blvd	El Toro Rd	330	204	92	304	532	242	568	1747	151	189	1544	73	5976
6	Paseo De Valencia	El Toro Rd	409	201	393	48	579	226	80	1129	170	332	685	21	4273
6	Ave Carlota (South)	I-5 SB Off-Ramp	0	564	289	289	685	0	0	0	0	324	0	706	2857
7	Avenida Carlota	Los Alisos Blvd	6	8	11	627	29	317	202	862	3	8	708	271	3052

5.0 Design Year 2050 Forecast Traffic Volumes

This section summarizes the opening year forecast traffic volumes for all Project Alternatives.

5.1 Design Year 2050 Forecast Volumes: No Build

Utilizing the methodologies described in **Section 3.0**, the resulting Design Year 2050 No Build Alternative volumes for the mainline are the same as those reflected in **Table 3-1.3** and **Table 3-1.4** and presented graphically in **Appendix B**.

The Design Year 2050 No Build Alternative volumes for the local arterials are the same as those reflected in **Table 3-2.2** and presented graphically in **Appendix A**.

5.2 Design Year 2050 Forecast Volumes: Alternative 1 - Modify SB Direction to Type L-9 Interchange

The Design Year 2050 forecast peak hour volumes for Alternative 1 for the I-5 mainline general purpose and HOV for the northbound and southbound directions are reflected in **Table 5-1.1** and **Table 5-1.2** and presented graphically in **Appendix B**.

Utilizing the methodologies described in **Section 3.0**, the resulting Design Year 2050 Alternative 2 volumes for the local arterials are summarized in **Table 5-1.3** and presented graphically in **Appendix A**.

TABLE 5-1.1: ALTERNATIVE 1 NORTHBOUND I-5 MAINLINE DESIGN YEAR 2050 VOLUMES

Northbound I-5								
ID	Location	Type	2050 GP			2050 HOV		
			AM	PM	ADT	AM	PM	ADT
South End								
1	Alicia Pkwy to El Toro Rd	ML	12,269	10,580	167,415	2,709	1,654	26,741
2	El Toro Rd Off-Ramp	Ramp	1,096	1,345	15,785			
3	El Toro Rd OC	ML	11,158	9,102	144,875	2,724	1,786	33,497
4	El Toro Rd Loop On-Ramp from EB El Toro Rd	Ramp	837	996	17,734			
5	El Toro Rd Proposed Tangent On-Ramp from Bridger Rd	Ramp	1,265	734	17,069			
6	El Toro to Lake Forest Dr	ML	13,483	10,675	187,625	2,502	1,943	25,549
North End								

TABLE 5-1.2: ALTERNATIVE 1 SOUTHBOUND I-5 MAINLINE DESIGN YEAR 2050 VOLUMES

ID	Location	Type	2050 GP			2050 HOV		
			AM	PM	ADT	AM	PM	ADT
	North End							
1	Lake Forest Dr OC	ML	9,727	11,004	164,017	1,279	2,656	28,950
2	Lake Forest Dr Loop On-Ramp	Ramp	558	611	13,566			
3	Lake Forest Dr Tangent On Ramp	Ramp	245	619	14,607			
4	Lake Forest Dr to El Toro Rd	ML	10,531	12,007	192,229	1,278	2,883	28,911
5	El Toro Rd Off-Ramp	Ramp	1,764	1,691	24,751			
6	El Toro Rd @ De La Carlota	ML	8,828	10,538	163,445	1,217	2,661	32,944
7	El Toro Rd On-Ramp (From De La Carlota)	Ramp	607	591	9,748			
8	El Toro Rd On Ramp (From EB El Toro)	Ramp	607	1,061	13,814			
9	El Toro Rd to Alicia Pkwy	ML	10,069	12,264	191,841	1,191	2,588	28,111
	South End							

**TABLE 5-1.3: DESIGN YEAR 2050 FORECAST VOLUMES: ALTERNATIVE 1 - ARTERIAL PEAK HOUR
INTERSECTION VOLUME**

AM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps	0	0	607	0	0	523	525	0	0	1693	0	71	3419
2	Avenida Carlota	El Toro Rd	152	0	300	665	211	817	0	1643	112	119	1768	607	6394
3	I-5 NB Ramps	El Toro Rd	628	46	422	51	4	222	102	1066	833	0	1662	1355	6391
4	Rockfield Blvd	El Toro Rd	600	287	76	67	189	218	323	1031	185	166	2199	69	5410
5	Paseo De Valencia	El Toro Rd	208	34	205	406	58	59	92	854	149	849	1098	514	4526
6	Avenida Carlota	Los Alisos Blvd	5	19	9	221	13	58	216	700	3	9	874	194	2321
Mid-Day Peak Hour Data -2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps	0	0	580	0	0	717	750	0	0	1645	0	110	3802
2	Avenida Carlota	El Toro Rd	273	0	461	837	271	537	0	1952	254	305	1510	580	6980
3	I-5 NB Ramps	El Toro Rd	679	53	643	102	0	259	175	1593	804	0	1383	1055	6746
4	Rockfield Blvd	El Toro Rd	439	189	59	265	274	264	641	1478	202	157	1735	213	5916
5	Paseo De Valencia	El Toro Rd	310	53	550	576	71	71	156	946	147	629	818	541	4868
6	Avenida Carlota	Los Alisos Blvd	1	8	3	341	12	169	204	474	2	5	458	285	1962
PM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps	0	0	591	0	0	1407	575	0	0	1630	0	61	4264
2	Avenida Carlota	El Toro Rd	139	0	555	755	297	578	0	2773	388	290	1323	591	7689
3	I-5 NB Ramps	El Toro Rd	572	53	720	112	5	236	139	1892	991	0	1396	839	6955
4	Rockfield Blvd	El Toro Rd	349	204	92	320	605	272	670	1818	178	201	1614	73	6396
5	Paseo De Valencia	El Toro Rd	409	107	514	1043	182	182	87	1258	184	746	678	388	5778
6	Avenida Carlota	Los Alisos Blvd	6	8	11	658	19	222	208	886	5	8	729	268	3028

5.3 Design Year 2050 Forecast Volumes: Alternative 2 - Direct Flyover to Bridger Road

The northbound I-5 mainline forecast for the Design Year 2050 Alternative 2 are shown in **Table 5-2.1**. The forecast southbound I-5 mainline with the added eastbound El Toro Direct Flyover to Bridger Road are reflected in **Table 5-2.2** for Opening Year 2050 and shown graphically in **Appendix B**.

Utilizing the methodologies described in **Section 3.0**, the resulting Design Year 2050 Alternative 2 volumes for the local arterials are summarized in **Table 5-2.3** and presented graphically in **Appendix A**.

TABLE 5-2.1: ALTERNATIVE 2 NORTHBOUND I-5 MAINLINE DESIGN YEAR 2050 VOLUMES

Northbound I-5								
			2050 GP			2050 HOV		
Location		Type	AM	PM	ADT	AM	PM	ADT
ID	South End							
1	Alicia Pkwy to El Toro Rd	ML	12,269	10,580	167,415	2,709	1,654	26,741
2	El Toro Rd Off-Ramp	Ramp	1,096	1,345	15,785			
3	El Toro Rd OC	ML	11,158	9,102	144,875	2,724	1,786	33,497
4	El Toro Rd Loop On-Ramp from EB El Toro Rd	Ramp	837	996	17,734			
5	El Toro Rd Proposed Tangent On-Ramp from Bridger Rd	Ramp	1,265	734	17,069			
6	El Toro to Lake Forest Dr	ML	13,483	10,675	187,625	2,502	1,943	25,549
	North End							

TABLE 5-2.2: ALTERNATIVE 2 SOUTHBOUND I-5 MAINLINE DESIGN YEAR 2050 VOLUMES

Southbound I-5								
Southbound I-5			2050 GP			2050 HOV		
ID	Location	Type	AM	PM	ADT	AM	PM	ADT
	North End							
1	Lake Forest Dr OC	ML	9,727	11,004	164,017	1,279	2,656	28,950
1	Lake Forest Dr Loop On-Ramp	Ramp	558	611	13,566			
2	Lake Forest Dr Tangent On Ramp	Ramp	245	619	14,607			
13	Lake Forest Dr to El Toro Rd	ML	10,531	12,007	192,229	1,278	2,883	28,911
3	El Toro Rd Off-Ramp	Ramp	1,058	894	14,851			
6	El Toro Rd Proposed Flyover Off-Ramp	Ramp	706	797	9,900			
14	El Toro Rd @ De La Carlota	ML	8,828	10,538	163,445	1,217	2,661	32,944
4	El Toro Rd On Ramp (From De La Carlota)	Ramp	823	1,045	15,079			
5	El Toro Rd On Tangent On Ramp	Ramp	392	608	8,483			
15	El Toro Rd to Alicia Pkwy	ML	10,069	12,264	191,841	1,191	2,538	28,111
	South End							

TABLE 5-2.3: DESIGN YEAR 2050 FORECAST VOLUMES: ALTERNATIVE 2 - ARTERIAL PEAK HOUR INTERSECTION VOLUMES

AM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/ Paseo De Valencia	4	383	557	225	192	106	139	41	14	251	736	71	2719
2	Avenida Carlota	El Toro Rd	29	105	300	133	269	102	0	1310	16	119	1536	839	4758
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	628	0	470	673	0	33	0	518	833	0	1890	1265	6310
4	Rockfield Blvd	El Toro Rd	600	287	76	67	189	356	445	1031	185	166	2199	69	5670
5	Paseo De Valencia	El Toro Rd	208	91	153	23	494	338	92	854	149	330	705	11	3448
6	Avenida Carlota	Los Alisos Blvd	5	19	9	221	13	58	216	700	3	9	874	194	2321
Mid-Day Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/ Paseo De Valencia	38	425	580	132	468	148	188	86	99	380	407	110	3061
2	Avenida Carlota	El Toro Rd	70	190	461	240	578	204	0	1531	57	305	1110	853	5599
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	679	0	696	818	0	40	0	957	815	0	1624	968	6597
4	Rockfield Blvd	El Toro Rd	439	189	59	265	274	418	791	1478	202	157	1735	213	6220
5	Paseo De Valencia	El Toro Rd	310	191	412	61	359	173	156	946	147	347	717	26	3845
6	Avenida Carlota	Los Alisos Blvd	1	8	3	341	12	169	204	474	2	5	458	285	1962
PM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Ramps/ Paseo De Valencia	44	318	591	367	706	334	185	87	54	351	482	61	3580
2	Avenida Carlota	El Toro Rd	53	85	555	335	680	158	0	1890	79	290	1044	868	6037
3	I-5 NB Ramps/ Bridger Rd	El Toro Rd	568	0	777	759	0	38	0	1176	996	0	1621	734	6669
4	Rockfield Blvd	El Toro Rd	349	204	92	320	605	392	716	1818	178	201	1614	73	6562
5	Paseo De Valencia	El Toro Rd	409	218	403	50	583	230	87	1258	184	345	716	21	4504
6	Avenida Carlota	Los Alisos Blvd	6	8	11	658	19	222	208	886	5	8	729	268	3028

5.4 Design Year 2050 Forecast Volumes: Alternative 3 - SB I-5 Off-Ramp Spilt with Divergent Signal Interchanges

The Design Year 2050 forecast peak hour volumes for Alternative 3 for the I-5 mainline general purpose and HOV for the northbound and southbound directions are reflected in **Table 5-3.1** and **Table 5-3.2** and presented graphically in **Appendix B**.

Utilizing the methodologies described in **Section 3.0**, the resulting Design Year 2050 Alternative 3 volumes for the local arterials are summarized in **Table 5-3.3** and presented graphically in **Appendix A**.

TABLE 5-3.1: ALTERNATIVE 3 NORTHBOUND I-5 MAINLINE DESIGN YEAR 2050 VOLUMES

Northbound I-5			2050 GP			2050 HOV		
ID	Location	Type	AM	PM	ADT	AM	PM	ADT
	South End							
1	Alicia Pkwy to El Toro Rd	ML	12,269	10,580	167,415	2,709	1,654	26,741
2	El Toro Rd Off-Ramp	Ramp	1,096	1,345	15,785			
3	El Toro Rd OC	ML	11,158	9,102	144,875	2,724	1,786	33,497
4	El Toro Rd Tan On-Ramp from WB El Toro Rd (Bridger Rd)	Ramp	1,265	734	17,069			
5	El Toro Rd Proposed Tangent On-Ramp from EB El Toro Rd	Ramp	837	996	17,734			
6	El Toro to Lake Forest Dr	ML	13,483	10,675	187,625	2,502	1,943	25,549
	North End							

TABLE 5-3.2: ALTERNATIVE 3 SOUTHBOUND I-5 MAINLINE DESIGN YEAR 2050 VOLUMES

ID	Southbound I-5		2050 GP			2050 HOV		
	Location	Type	AM	PM	ADT	AM	PM	ADT
	North End							
1	Lake Forest Dr OC	ML	9,727	11,004	164,017	1,279	2,656	28,950
2	Lake Forest Dr Loop On-Ramp	Ramp	558	611	13,566			
3	Lake Forest Dr Tangent On Ramp	Ramp	245	619	14,607			
4	Lake Forest Dr to El Toro Rd	ML	10,531	12,007	192,229	1,278	2,883	28,911
5	El Toro Rd WB Off-Ramp to De La Carlota	Ramp	1,093	930	14,722			
6	El Toro Tangent EB Off-Ramp to El Toro Rd	Ramp	671	761	10,029			
7	El Toro Rd @ De La Carlota	ML	8,828	10,538	163,445	1,217	2,661	32,944
8	El Toro Rd On Ramp (From De La Carlota)	Ramp	293	484	8,729			
9	El Toro Rd On Tangent On Ramp From EB & WB El Toro Rd	Ramp	922	1,168	14,834			
10	El Toro Rd to Alicia Pkwy	ML	10,069	12,264	191,841	1,191	2,588	28,111
	South End							

**TABLE 5-3.3: DESIGN YEAR 2050 FORECAST VOLUMES: ALTERNATIVE 3 - ARTERIAL PEAK HOUR
INTERSECTION VOLUME**

AM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Off-Ramp	43	383	27	225	71	231	139	41	14	286	736	71	2267
2	Avenida Carlota	El Toro Rd	0	134	300	0	269	102	0	1426	16	119	1563	304	4233
3	I-5 SB Off-Ramp	El Toro Rd	0	0	0	671	0	0	0	1334	0	0	0	0	2005
4	I-5 NB Ramps	El Toro Rd	628	0	468	51	0	226	102	1066	0	0	1662	1355	5558
5	Rockfield Blvd	El Toro Rd	600	287	76	67	189	218	369	1031	185	166	2199	69	5456
6	Paseo De Valencia	El Toro Rd	208	91	153	151	494	365	92	854	149	330	678	11	3576
7	Avenida Carlota	Los Alisos Blvd	5	19	9	221	13	58	216	700	3	9	874	194	2321
Mid-Day Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Off-Ramp	104	425	25	132	255	361	188	86	99	423	407	110	2615
2	Avenida Carlota	El Toro Rd	0	260	461	0	578	204	0	1758	57	305	1188	273	5084
3	I-5 SB Off-Ramp	El Toro Rd	0	0	0	815	0	0	0	1759	0	0	0	0	2574
4	I-5 NB Ramps	El Toro Rd	679	0	696	102	0	259	175	1584	0	0	1383	1055	5933
5	Rockfield Blvd	El Toro Rd	439	189	59	265	274	264	702	1478	202	157	1735	213	5977
6	Paseo De Valencia	El Toro Rd	310	191	412	281	359	232	156	946	149	347	717	26	4126
7	Avenida Carlota	Los Alisos Blvd	1	8	3	341	12	169	204	474	2	5	458	285	1962
PM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach Volume
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Avenida Carlota	I-5 SB Off-Ramp	95	318	30	367	390	651	185	87	54	392	477	61	3107
2	Avenida Carlota	El Toro Rd	0	137	555	0	680	158	0	2210	79	290	1049	304	5462
3	I-5 SB Off-Ramp	El Toro Rd	0	0	0	761	0	0	0	2157	0	0	0	0	2918
4	I-5 NB Ramps	El Toro Rd	572	0	773	112	0	236	139	1783	0	0	1396	839	5850
5	Rockfield Blvd	El Toro Rd	349	204	92	320	605	272	672	1818	178	201	1614	73	6398
6	Paseo De Valencia	El Toro Rd	409	218	403	390	583	250	87	1258	184	345	716	21	4864
7	Avenida Carlota	Los Alisos Blvd	6	8	11	658	29	336	208	886	3	8	729	277	3159

5.5 Design Year 2050 Forecast Volumes: Alternative 4 – Collector-Distributor for SB I-5 On/Off-Ramps

The Design Year 2050 forecast peak hour volumes for Alternative 4 for the I-5 mainline general purpose and HOV for the northbound and southbound directions are reflected in **Table 5-4.1** and **Table 5-4.2** and presented graphically in **Appendix B**.

Utilizing the methodologies described in **Section 3.0**, the resulting Design Year 2050 Alternative 4 volumes for the local arterials are summarized in **Table 5-4.3** and presented graphically in **Appendix A**.

TABLE 5-4.1: ALTERNATIVE 4 NORTHBOUND I-5 MAINLINE DESIGN YEAR 2050 VOLUMES

Northbound I-5								
ID	Location	Type	2050 GP			2050 HOV		
			AM	PM	ADT	AM	PM	ADT
South End								
1	Alicia Pkwy to El Toro Rd	ML	12,269	10,580	167,415	2,709	1,654	26,741
2	El Toro Rd Off-Ramp	Ramp	1,096	1,345	15,785			
3	El Toro Rd OC	ML	11,158	9,102	144,875	2,724	1,786	33,497
4	El Toro Rd Loop On-Ramp from EB El Toro Rd	Ramp	837	996	17,734			
5	El Toro Rd Proposed Tangent On-Ramp from Bridger Rd	Ramp	1,265	734	17,069			
6	El Toro to Lake Forest Dr	ML	13,483	10,675	187,625	2,502	1,943	25,549
North End								

TABLE 5-4.2: ALTERNATIVE 4 SOUTHBOUND I-5 MAINLINE DESIGN YEAR 2050 VOLUMES

ID	Location	Type	2050 GP			2050 HOV		
			AM	PM	ADT	AM	PM	ADT
	North End							
1	Lake Forest Dr OC	ML	9,727	11,004	164,017	1,279	2,656	28,950
2	Lake Forest Dr Loop On-Ramp	Ramp	558	611	13,566			
3	Lake Forest Dr Tangent On Ramp	Ramp	245	619	14,607			
4	Lake Forest Dr to El Toro Rd	ML	10,531	12,007	192,229	1,278	2,883	28,911
5	El Toro Rd WB Off-Ramp to De La Carlota (North of El Toro Road)	Ramp	876	612	24,751			
6	El Toro Rd Proposed Collector/Distributor (To El Toro proposed Off Ramp to De La Carlota South)	CD	888	1,079				
7	El Toro Rd @ De La Carlota	ML	8,828	10,538	163,445	1,217	2,661	32,944
8	El Toro Rd On-Ramp (From De La Carlota North)	Ramp	823	1,045	15,079			
9	El Toro Rd proposed On Ramp (From De La Carlota South)	Ramp	392	608	8,483			
10	El Toro Rd to Alicia Pkwy	ML	10,069	12,264	191,841	1,191	2,588	28,111
	South End							

TABLE 5-4.3: DESIGN YEAR 2050 FORECAST VOLUMES: ALTERNATIVE 4 - ARTERIAL PEAK HOUR INTERSECTION VOLUME

AM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Ave Carlota (North)	I-5 SB Hook Ramps	4	383	557	225	192	106	139	41	14	60	745	71	2537
2	Avenida Carlota	El Toro Rd	29	105	779	115	49	102	0	1111	188	119	1536	839	4972
3	I-5 NB Ramps	El Toro Rd	610	46	403	51	0	222	102	1066	837	0	2909	108	6354
4	Rockfield Blvd	El Toro Rd	600	287	76	67	189	218	387	1031	185	166	2199	69	5474
5	Paseo De Valencia	El Toro Rd	208	91	153	23	494	338	92	854	149	330	705	11	3448
6	Ave Carlota (South)	I-5 SB Ramps	0	450	196	196	235	0	0	0	0	232	0	656	1965
7	Avenida Carlota	Los Alisos Blvd	5	19	9	221	13	58	216	700	3	9	874	194	2321
Mid-Day Peak Hour Data -2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Ave Carlota (North)	I-5 SB Ramps	38	425	580	132	468	148	188	86	99	55	407	110	2736
2	Avenida Carlota	El Toro Rd	273	0	461	837	271	537	0	1952	254	305	1510	580	6980
3	I-5 NB Ramps	El Toro Rd	679	53	643	102	0	259	175	1576	804	0	2298	140	6729
4	Rockfield Blvd	El Toro Rd	439	189	59	265	274	264	641	1478	202	157	1735	213	5916
5	Paseo De Valencia	El Toro Rd	310	53	550	576	71	71	156	946	147	629	818	541	4868
6	Ave Carlota (South)	I-5 SB Ramps	0	452	230	230	616	0	0	0	0	377	0	816	2721
7	Avenida Carlota	Los Alisos Blvd	1	8	3	341	12	169	204	474	2	5	458	285	1962
PM Peak Hour Data - 2050															
ID	North-South Street	East-West Street	Design Year (2050) Peak Hour Intersection Turning Movement Volumes												Total Approach
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Ave Carlota (North)	I-5 SB Ramps	44	318	591	367	706	334	185	87	54	69	482	61	3298
2	Avenida Carlota	El Toro Rd	53	85	1006	335	336	158	0	1571	398	290	1044	868	6144
3	I-5 NB Ramps	El Toro Rd	572	53	720	112	0	236	139	1892	991	0	2128	107	6950
4	Rockfield Blvd	El Toro Rd	349	204	92	320	605	272	613	1818	178	201	1614	73	6339
5	Paseo De Valencia	El Toro Rd	409	218	403	50	583	230	87	1258	184	345	716	21	4504
6	Ave Carlota (South)	I-5 Ramps	0	564	304	304	720	0	0	0	0	353	0	726	2971
7	Avenida Carlota	Los Alisos Blvd	6	8	11	658	19	222	208	886	5	8	729	268	3028

APPENDIX A: INTERSECTION TURNING MOVEMENT VOLUME EXHIBITS

EXISTING AND FUTURE YEAR ALT 1, ALT 2 AND ALT 3



EXHIBIT A-1 Existing (2017) Intersection Turning Movement Volumes AM Peak Hour Volumes

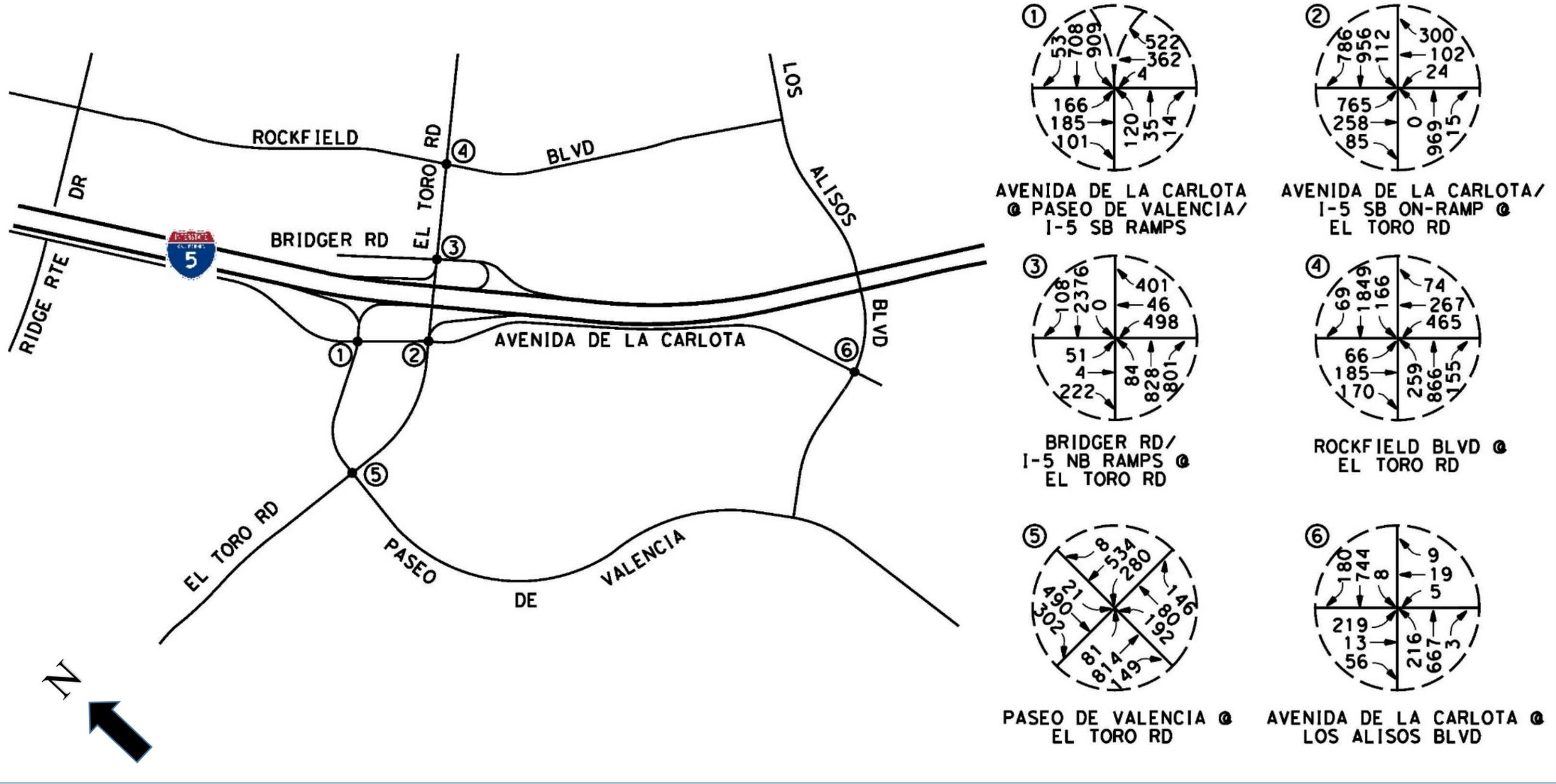
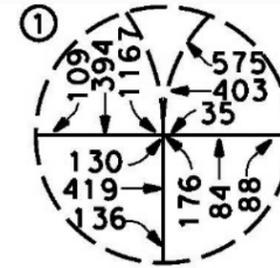
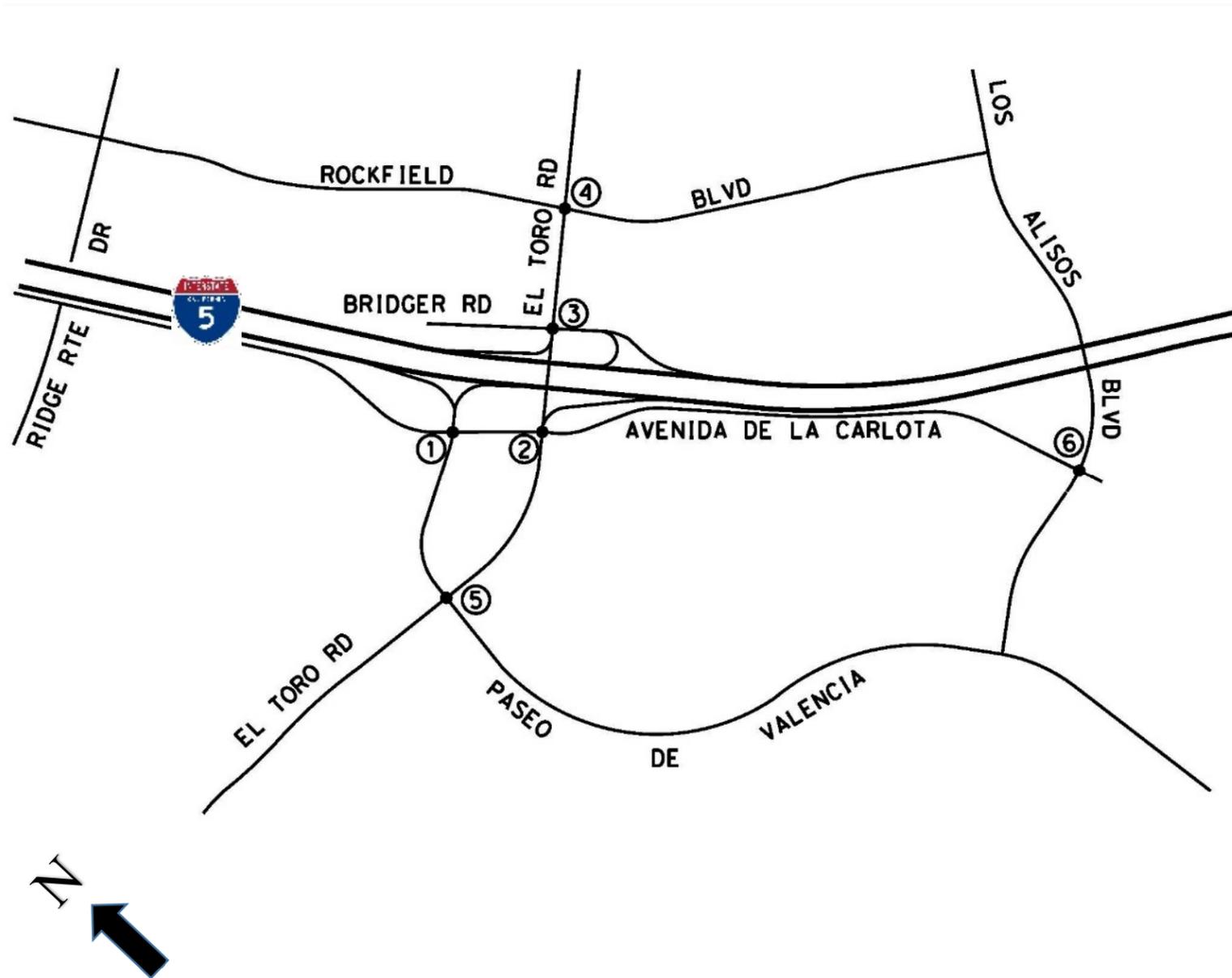
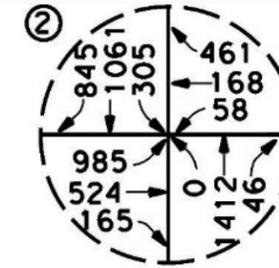




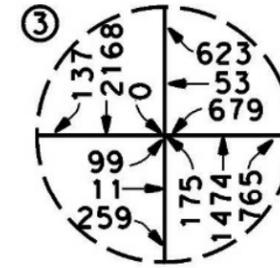
EXHIBIT A-2 Existing (2017) Intersection Turning Movement Volumes Mid-Day Peak Hour Volumes



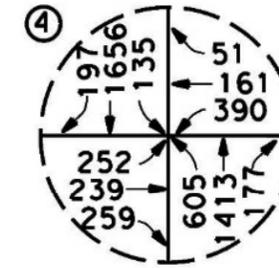
① AVENIDA DE LA CARLOTA @ PASEO DE VALENCIA / I-5 SB RAMPS



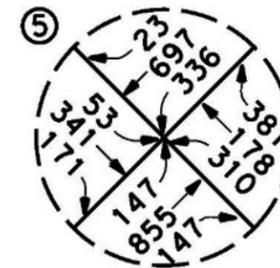
② AVENIDA DE LA CARLOTA / I-5 SB ON-RAMP @ EL TORO RD



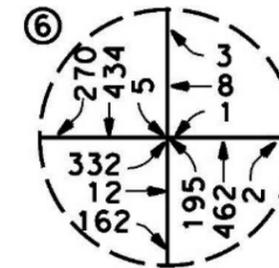
③ BRIDGER RD / I-5 NB RAMPS @ EL TORO RD



④ ROCKFIELD BLVD @ EL TORO RD



⑤ PASEO DE VALENCIA @ EL TORO RD



⑥ AVENIDA DE LA CARLOTA @ LOS ALISOS BLVD



EXHIBIT A-3 Existing (2017) Intersection Turning Movement Volumes PM Peak Hour Volumes

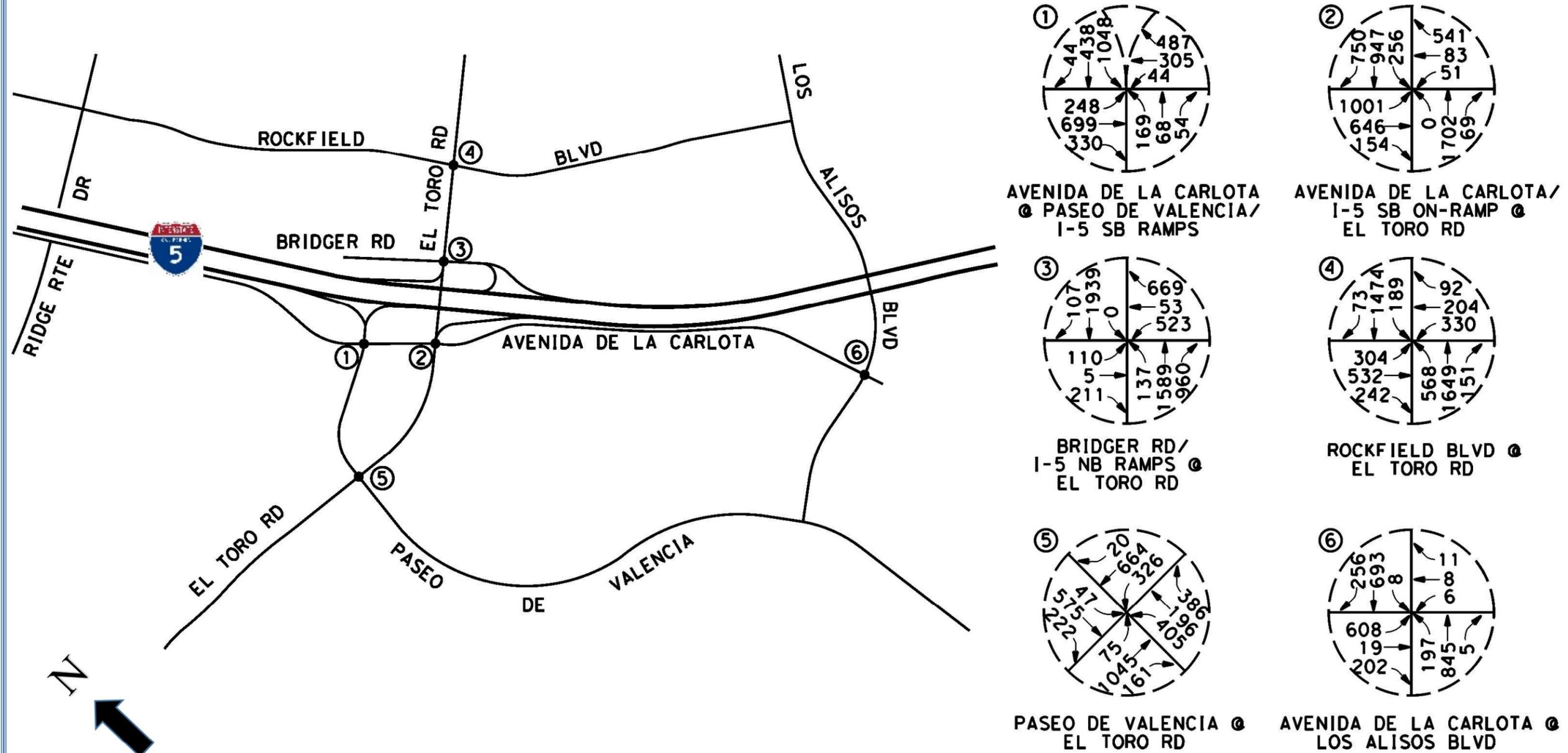




EXHIBIT B-1 No Build Opening Year (2030) Intersection Turning Movement Volumes AM Peak Hour Volumes

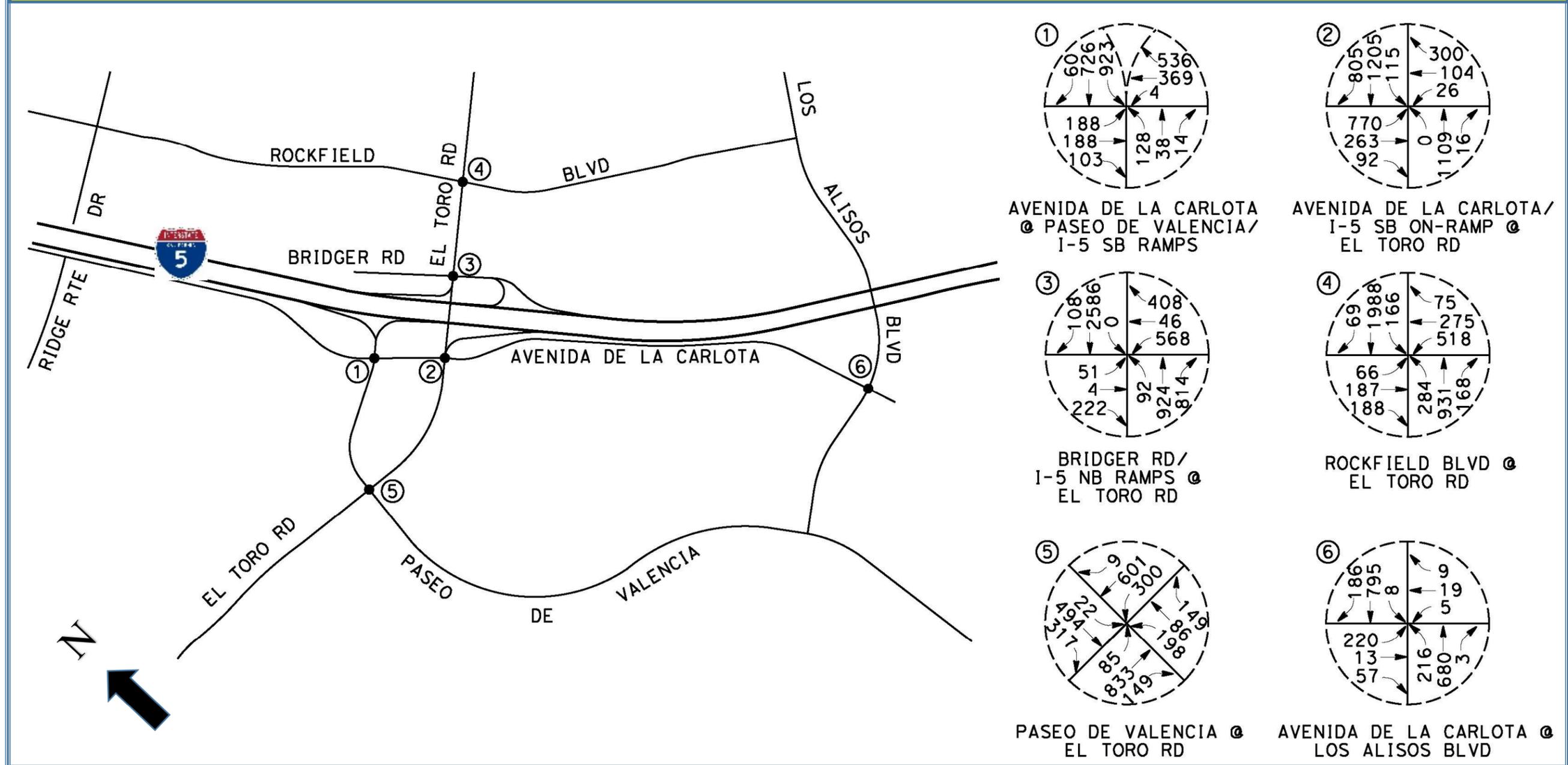




EXHIBIT B-2 No Build Opening Year (2030) Intersection Turning Movement Volumes Mid-Day Peak Hour Volumes

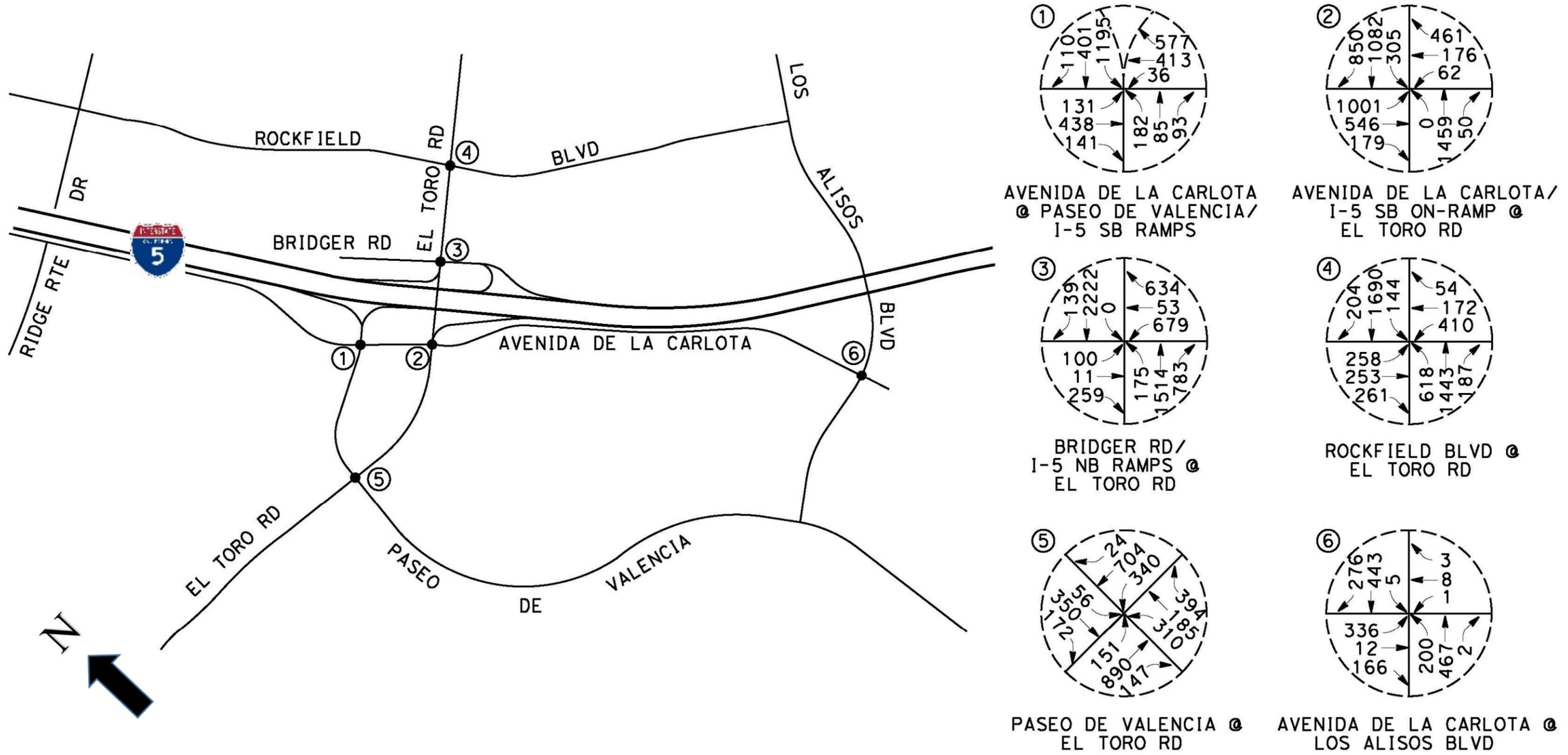




EXHIBIT B-3 No Build Opening Year (2030) Intersection Turning Movement Volumes PM Peak Hour Volumes

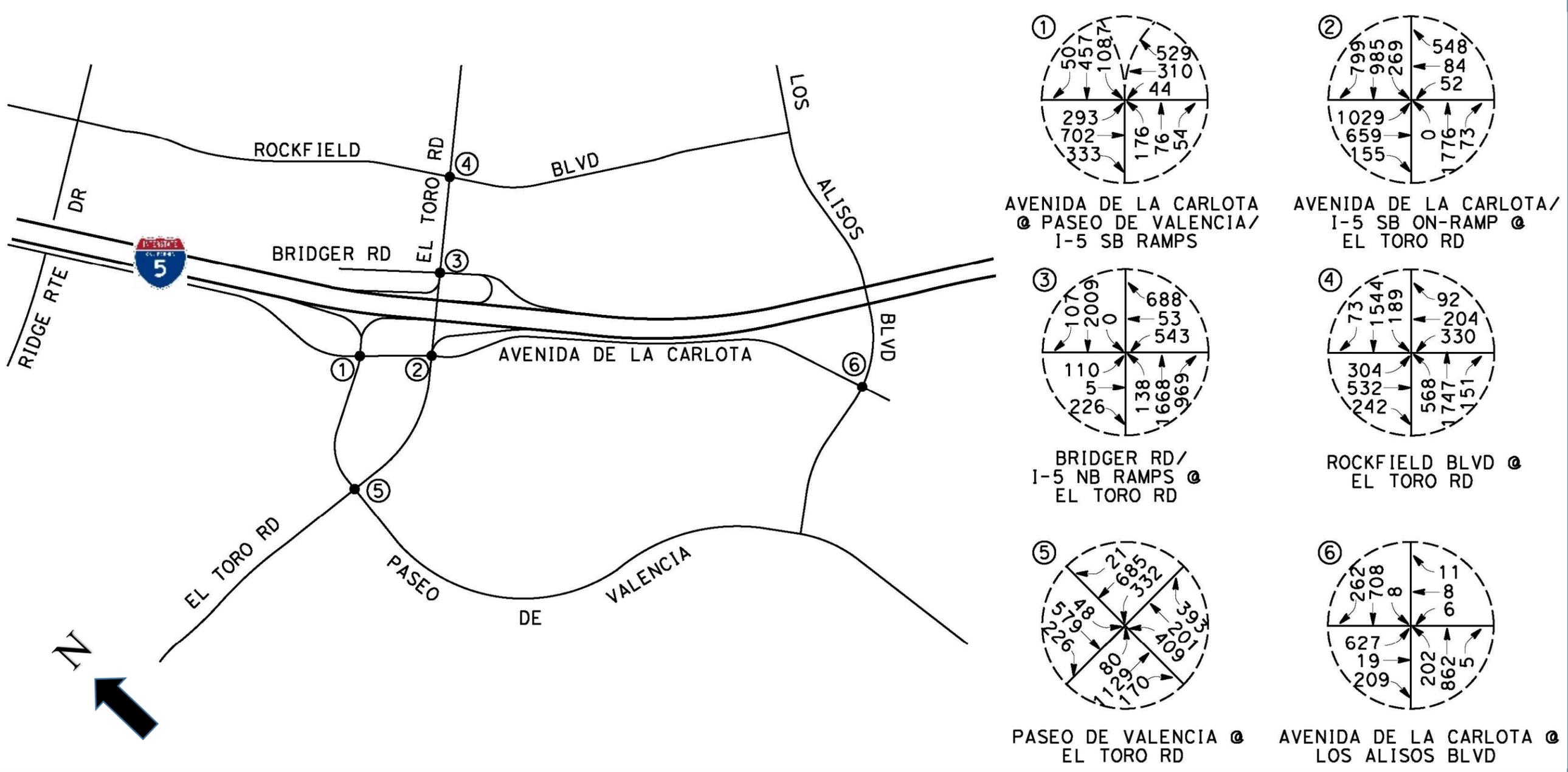




EXHIBIT C-1 Alternative 1 Opening Year (2030) Intersection Turning Movement Volumes AM Peak Hour Volumes

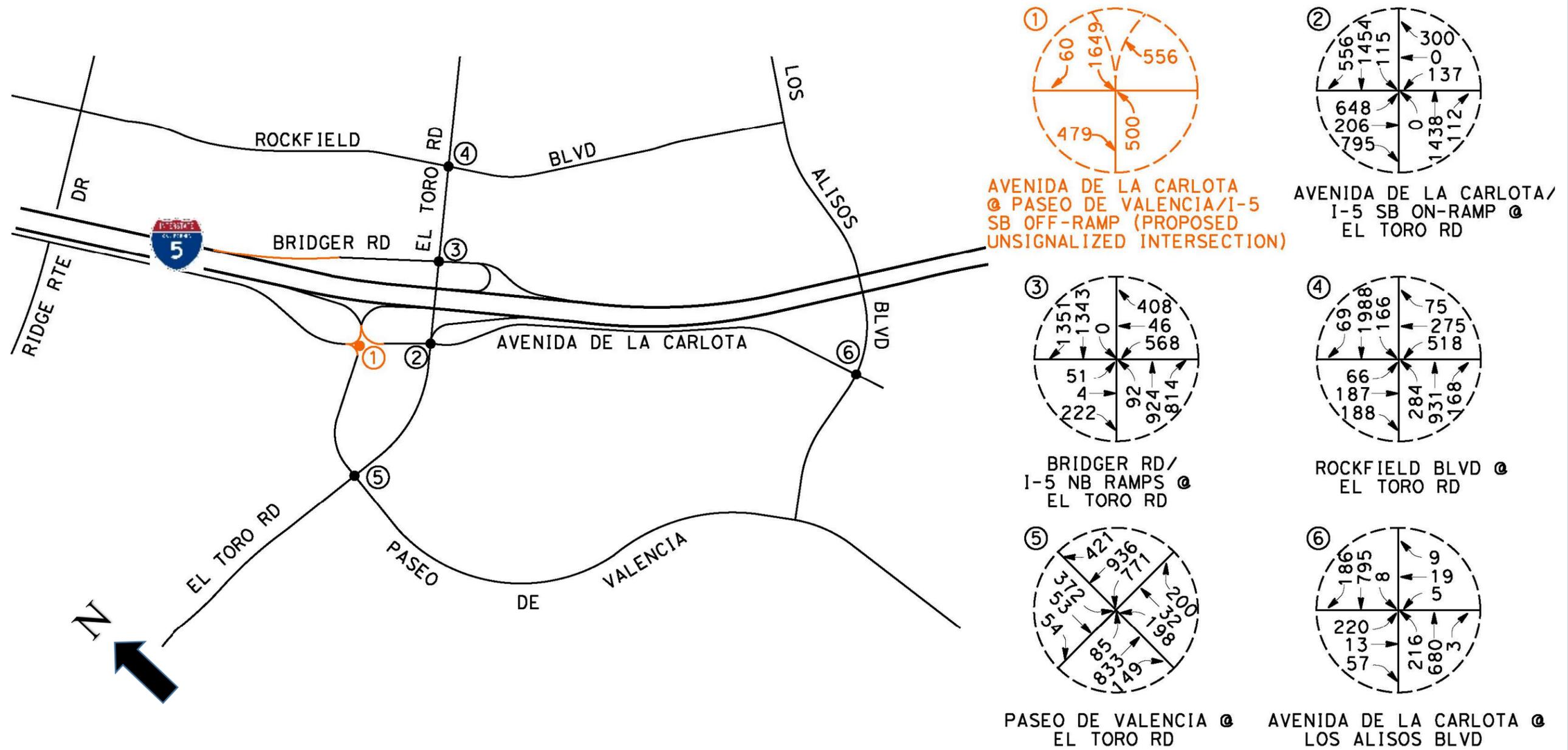




EXHIBIT C-2 Alternative 1 Opening Year (2030) Intersection Turning Movement Volumes Mid-Day Peak Hour Volumes

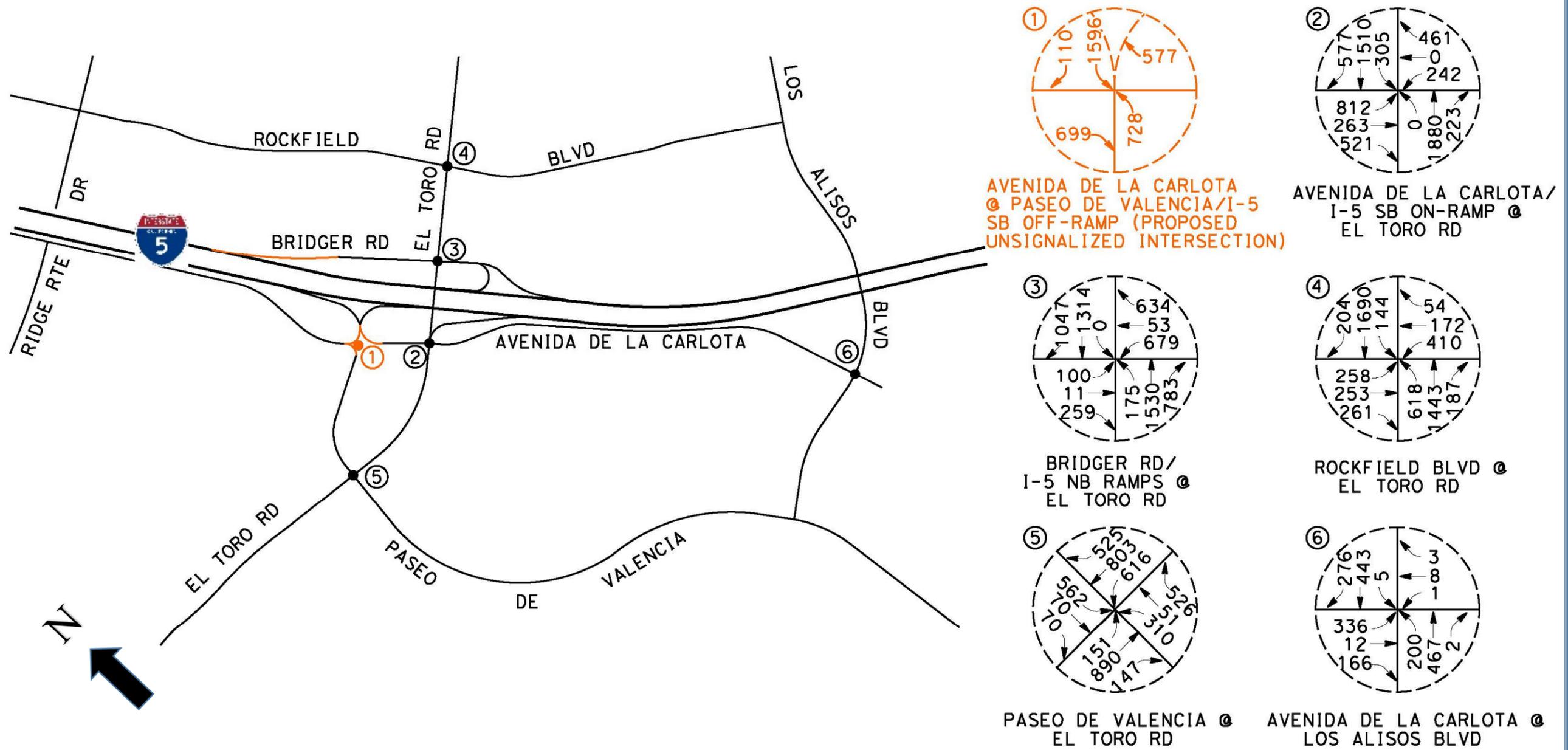




EXHIBIT C-3 Alternative 1 Opening Year (2030) Intersection Turning Movement Volumes PM Peak Hour Volumes

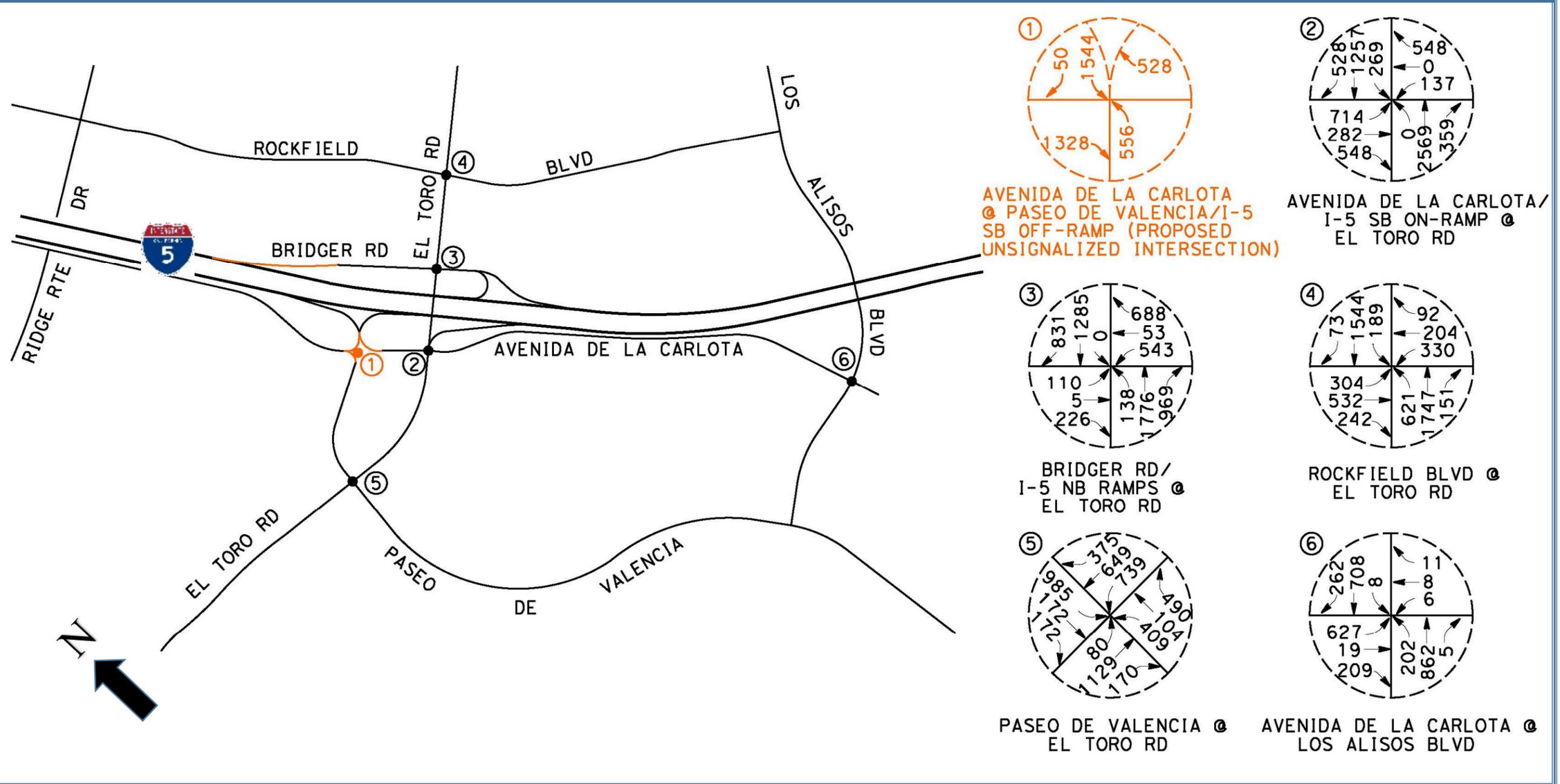




EXHIBIT D-1 Alternative 2 Opening Year (2030) Intersection Turning Movement Volumes AM Peak Hour Volumes

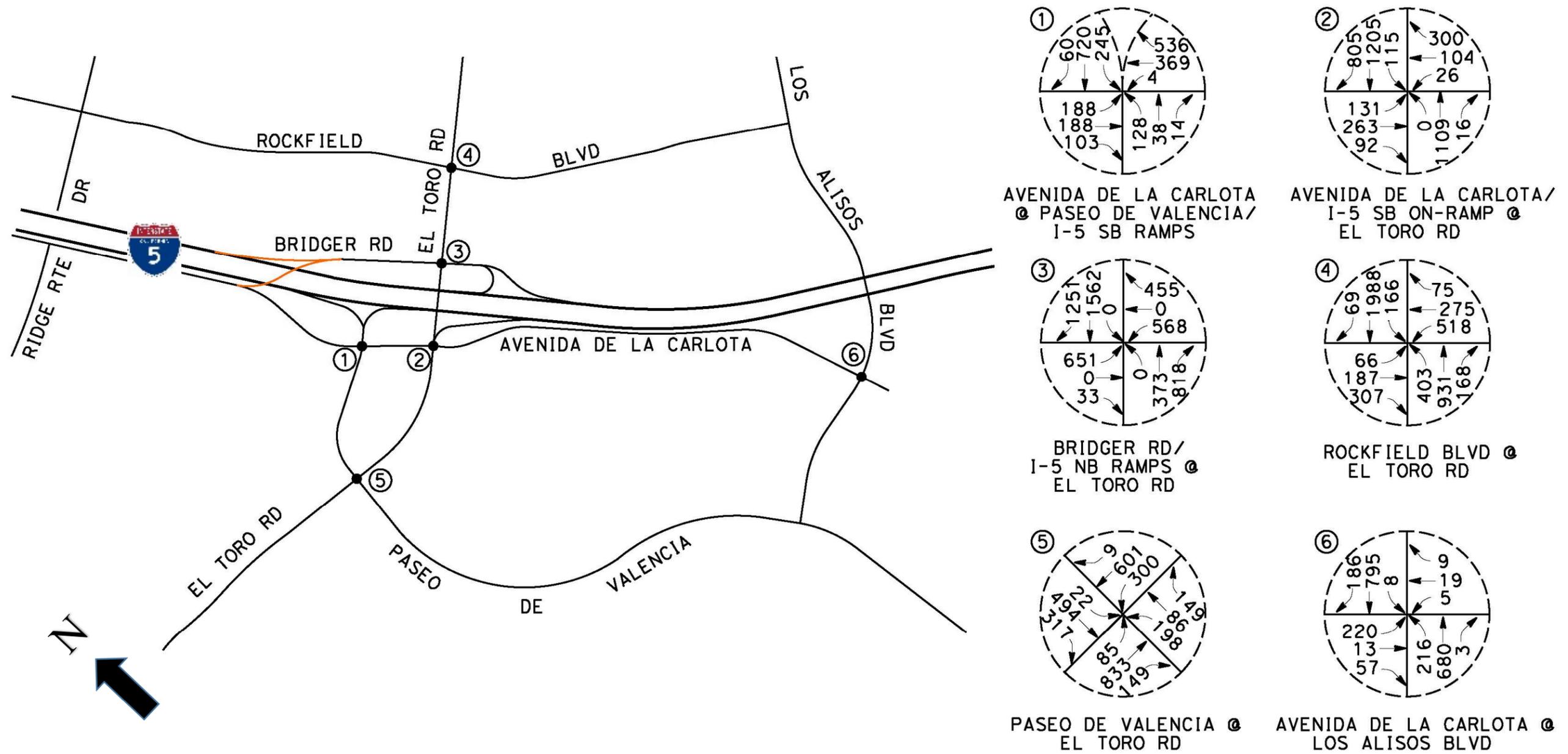




EXHIBIT D-2
Alternative 2 Opening Year (2030) Intersection Turning Movement Volumes
Mid-Day Peak Hour Volumes

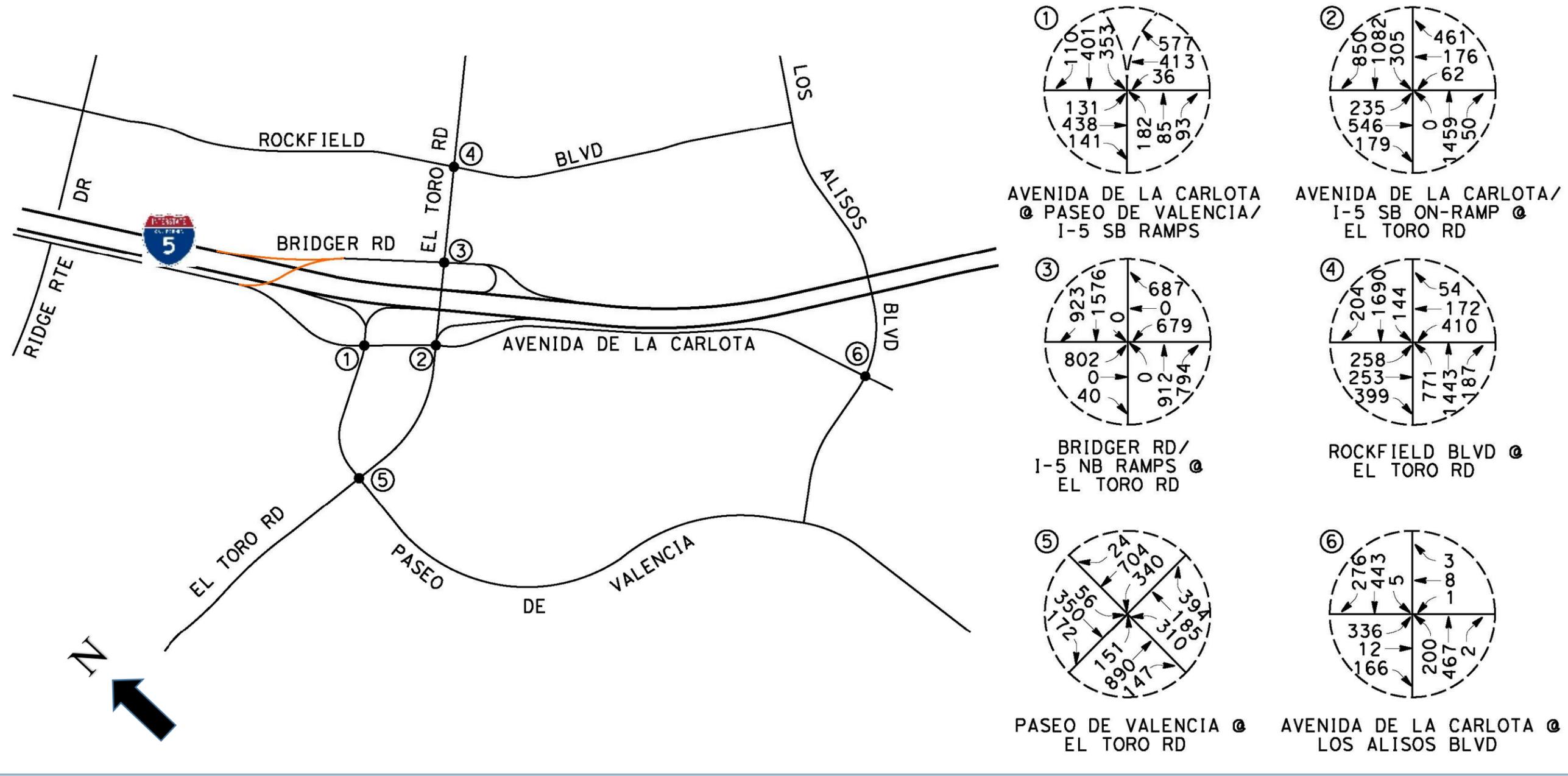




EXHIBIT D-3 Alternative 2 Opening Year (2030) Intersection Turning Movement Volumes PM Peak Hour Volumes

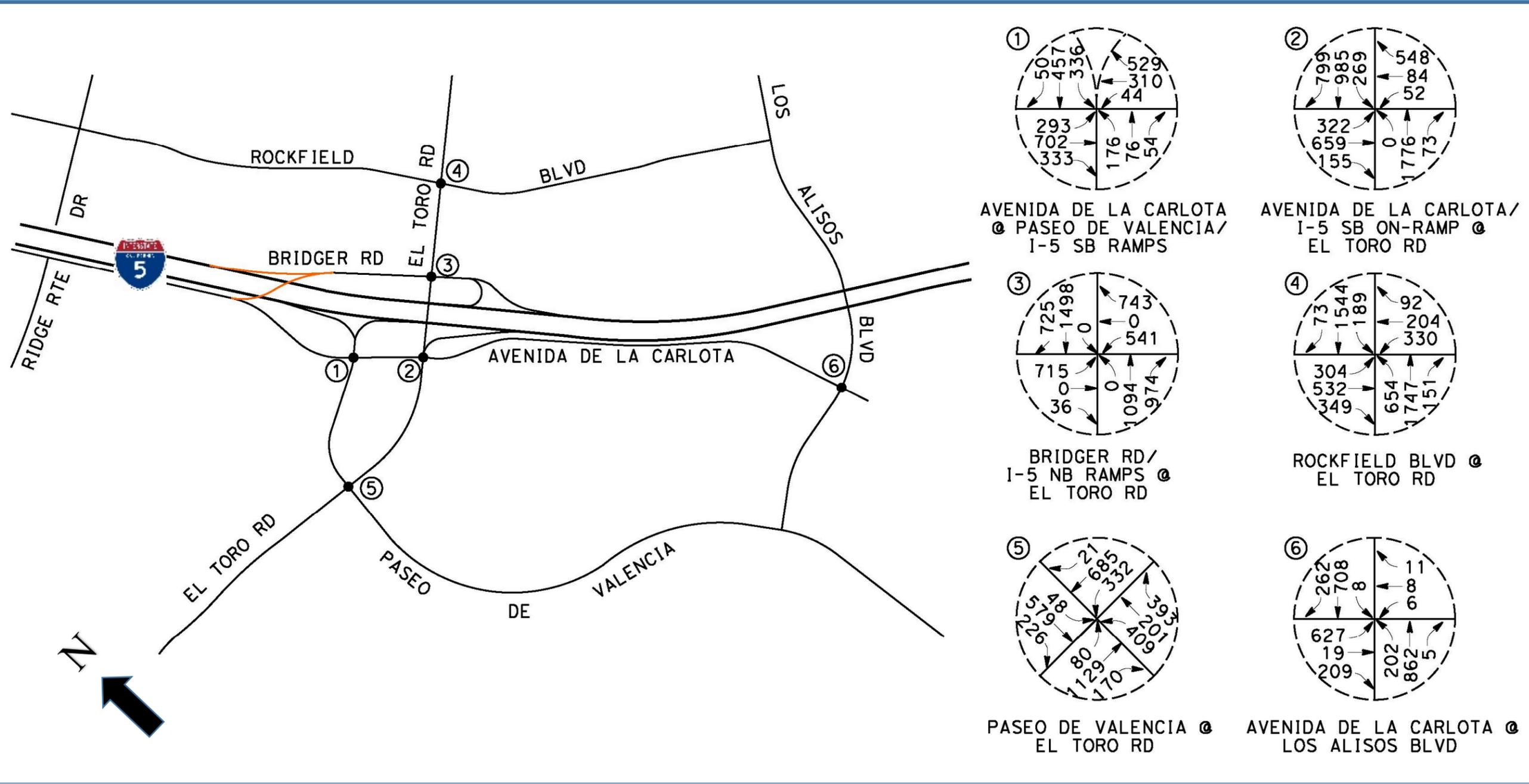
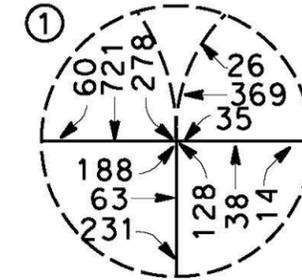
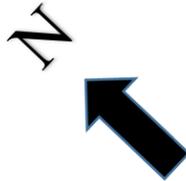
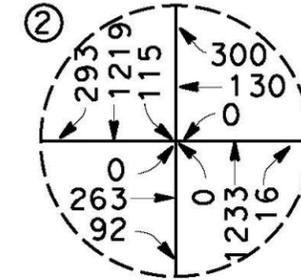




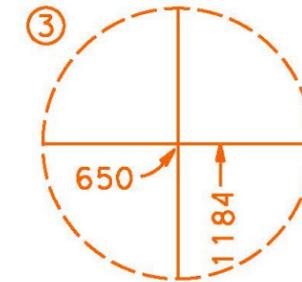
EXHIBIT E-1 Alternative 3 Opening Year (2030) Intersection Turning Movement Volumes AM Peak Hour Volumes



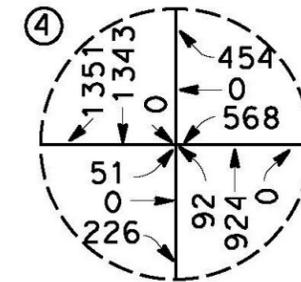
① AVENIDA DE LA CARLOTA @ PASEO DE VALENCIA / I-5 SB RAMPS



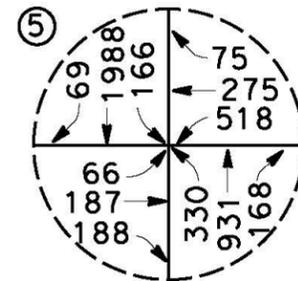
② AVENIDA DE LA CARLOTA / I-5 SB ON-RAMP @ EL TORO RD



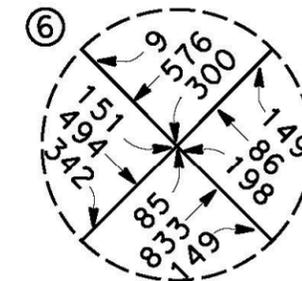
③ EL TORO RD @ I-5 SB OFF-RAMP (PROPOSED SIGNAL EB ONLY)



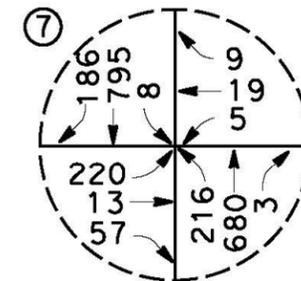
④ BRIDGER RD / I-5 NB RAMPS @ EL TORO RD



⑤ ROCKFIELD BLVD @ EL TORO RD



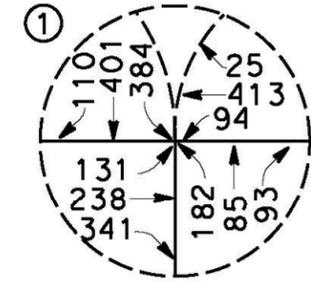
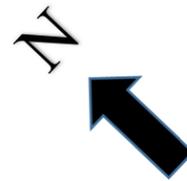
⑥ PASEO DE VALENCIA @ EL TORO RD



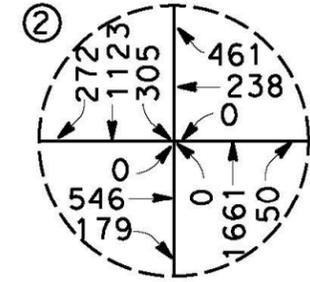
⑦ AVENIDA DE LA CARLOTA @ LOS ALISOS BLVD



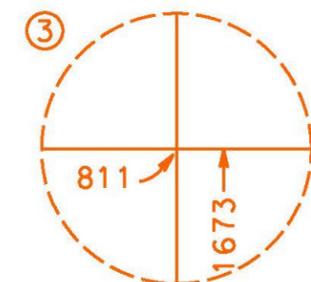
EXHIBIT E-2 Alternative 3 Opening Year (2030) Intersection Turning Movement Volumes Mid-Day Peak Hour Volumes



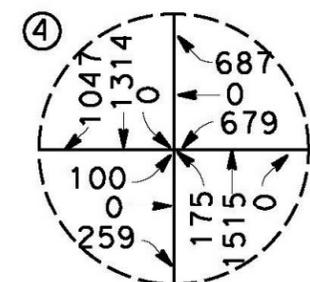
① AVENIDA DE LA CARLOTA @ PASEO DE VALENCIA / I-5 SB RAMP



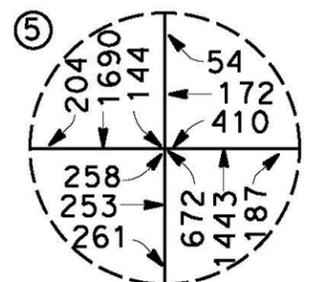
② AVENIDA DE LA CARLOTA / I-5 SB ON-RAMP @ EL TORO RD



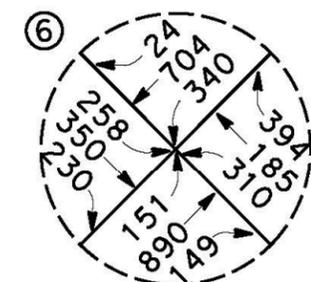
③ EL TORO RD @ I-5 SB OFF-RAMP (PROPOSED SIGNAL EB ONLY)



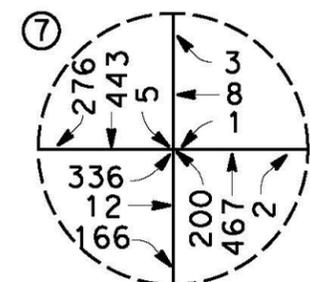
④ BRIDGER RD / I-5 NB RAMP @ EL TORO RD



⑤ ROCKFIELD BLVD @ EL TORO RD



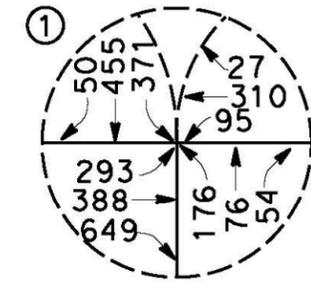
⑥ PASEO DE VALENCIA @ EL TORO RD



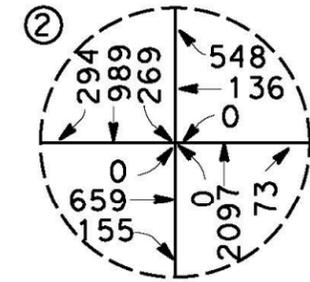
⑦ AVENIDA DE LA CARLOTA @ LOS ALISOS BLVD



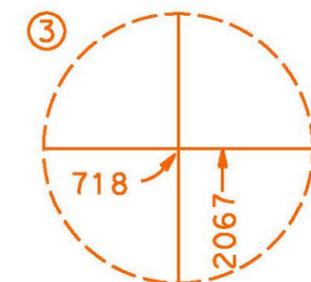
EXHIBIT E-3 Alternative 3 Opening Year (2030) Intersection Turning Movement Volumes PM Peak Hour Volumes



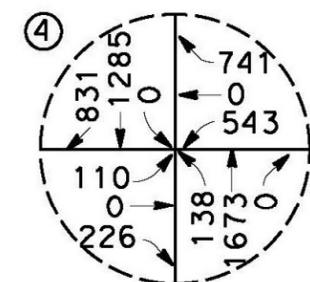
① AVENIDA DE LA CARLOTA @ PASEO DE VALENCIA / I-5 SB RAMP



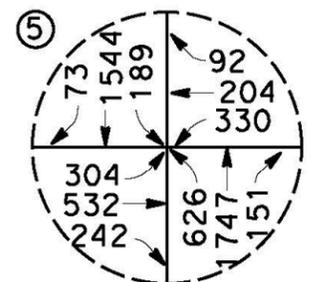
② AVENIDA DE LA CARLOTA / I-5 SB ON-RAMP @ EL TORO RD



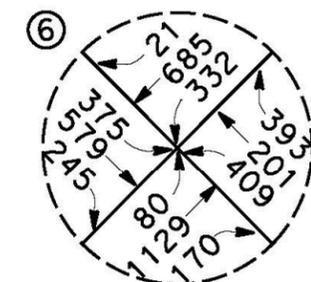
③ EL TORO RD @ I-5 SB OFF-RAMP (PROPOSED SIGNAL EB ONLY)



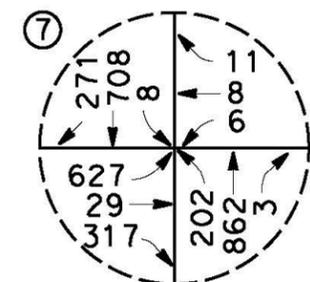
④ BRIDGER RD / I-5 NB RAMP @ EL TORO RD



⑤ ROCKFIELD BLVD @ EL TORO RD



⑥ PASEO DE VALENCIA @ EL TORO RD



⑦ AVENIDA DE LA CARLOTA @ LOS ALISOS BLVD



EXHIBIT F-1 Alternative 4 Opening Year (2030) Intersection Turning Movement Volumes AM Peak Hour Volumes

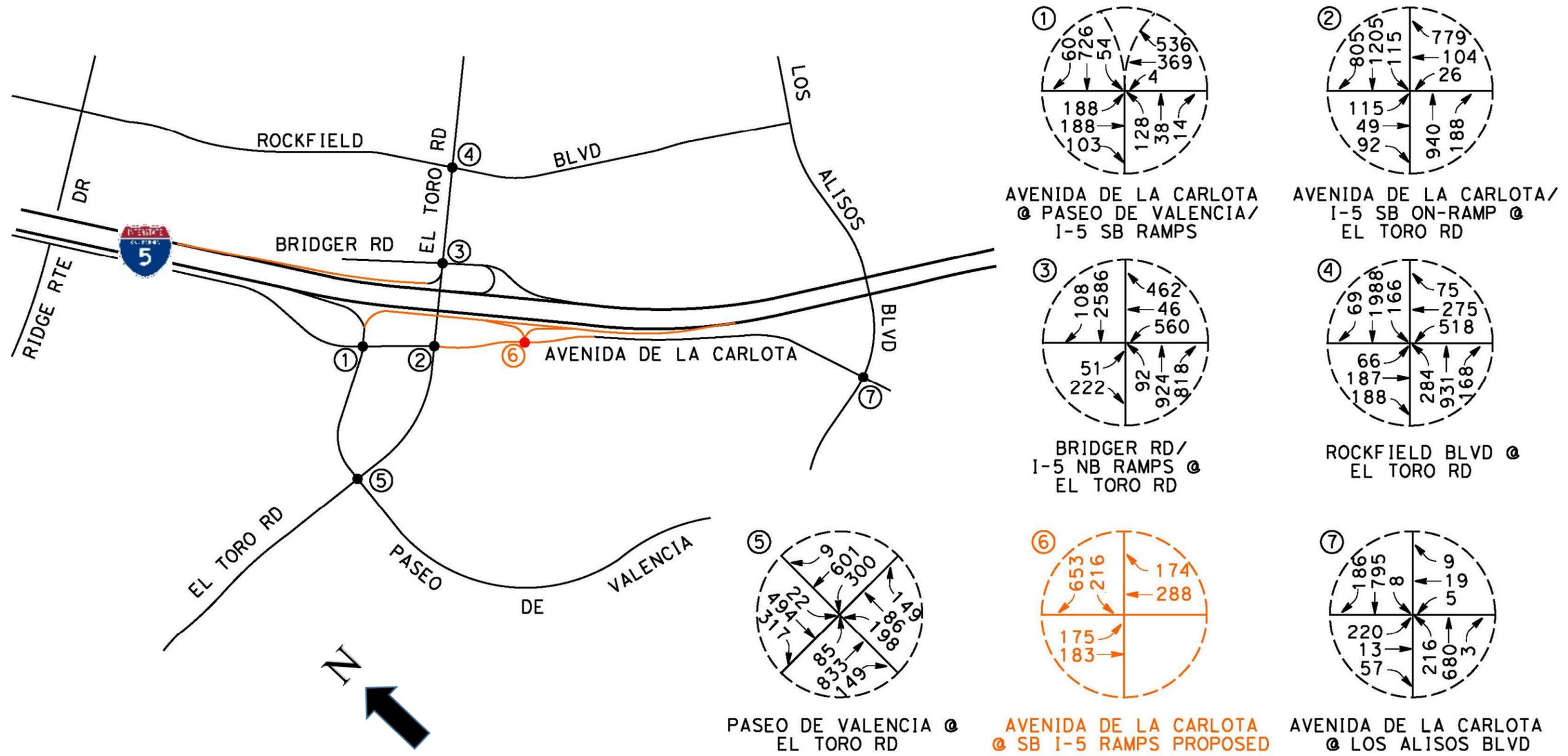




EXHIBIT F-2 Alternative 4 Opening Year (2030) Intersection Turning Movement Volumes AM Peak Hour Volumes

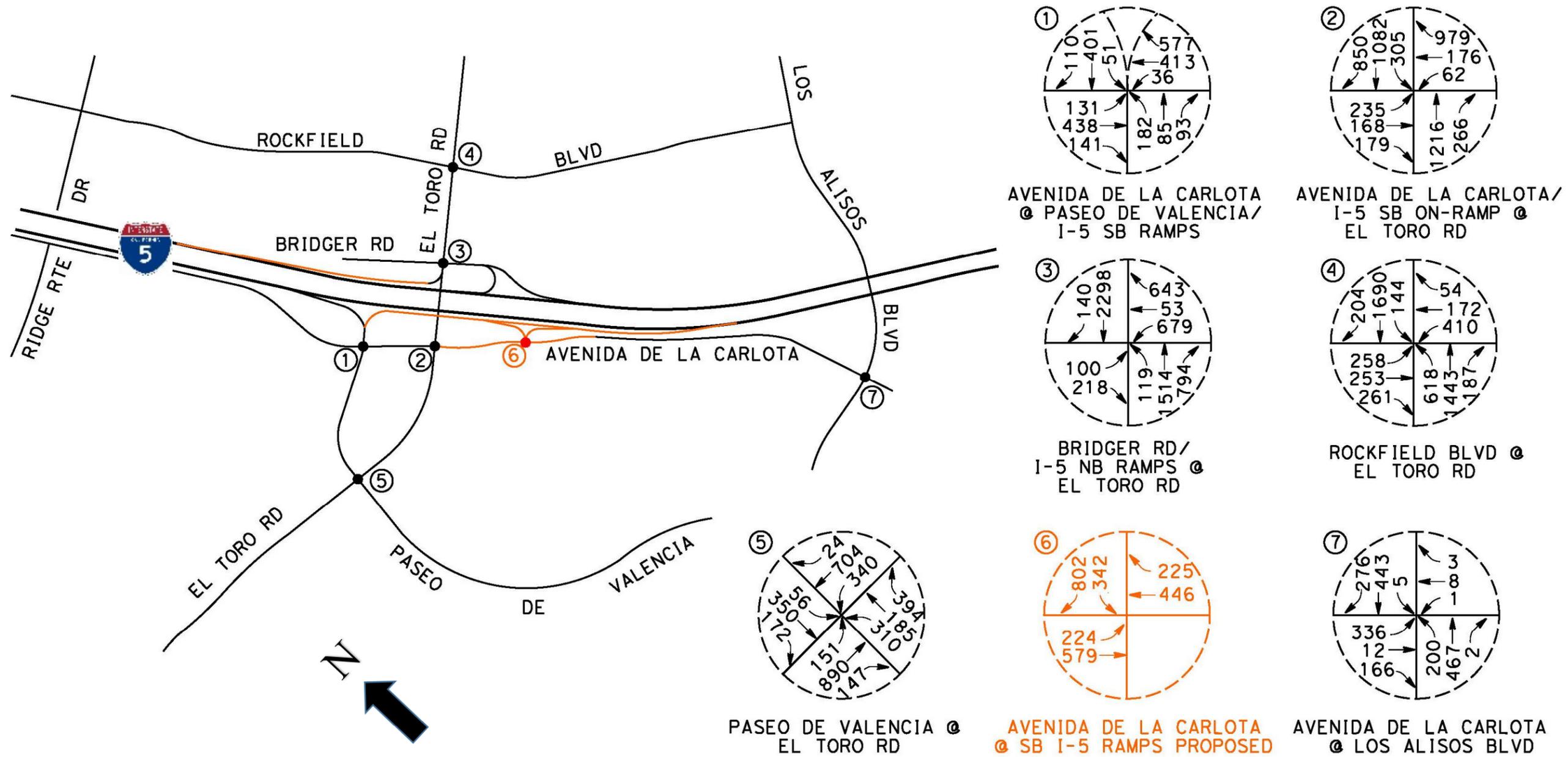




EXHIBIT F-3 Alternative 4 Opening Year (2030) Intersection Turning Movement Volumes AM Peak Hour Volumes

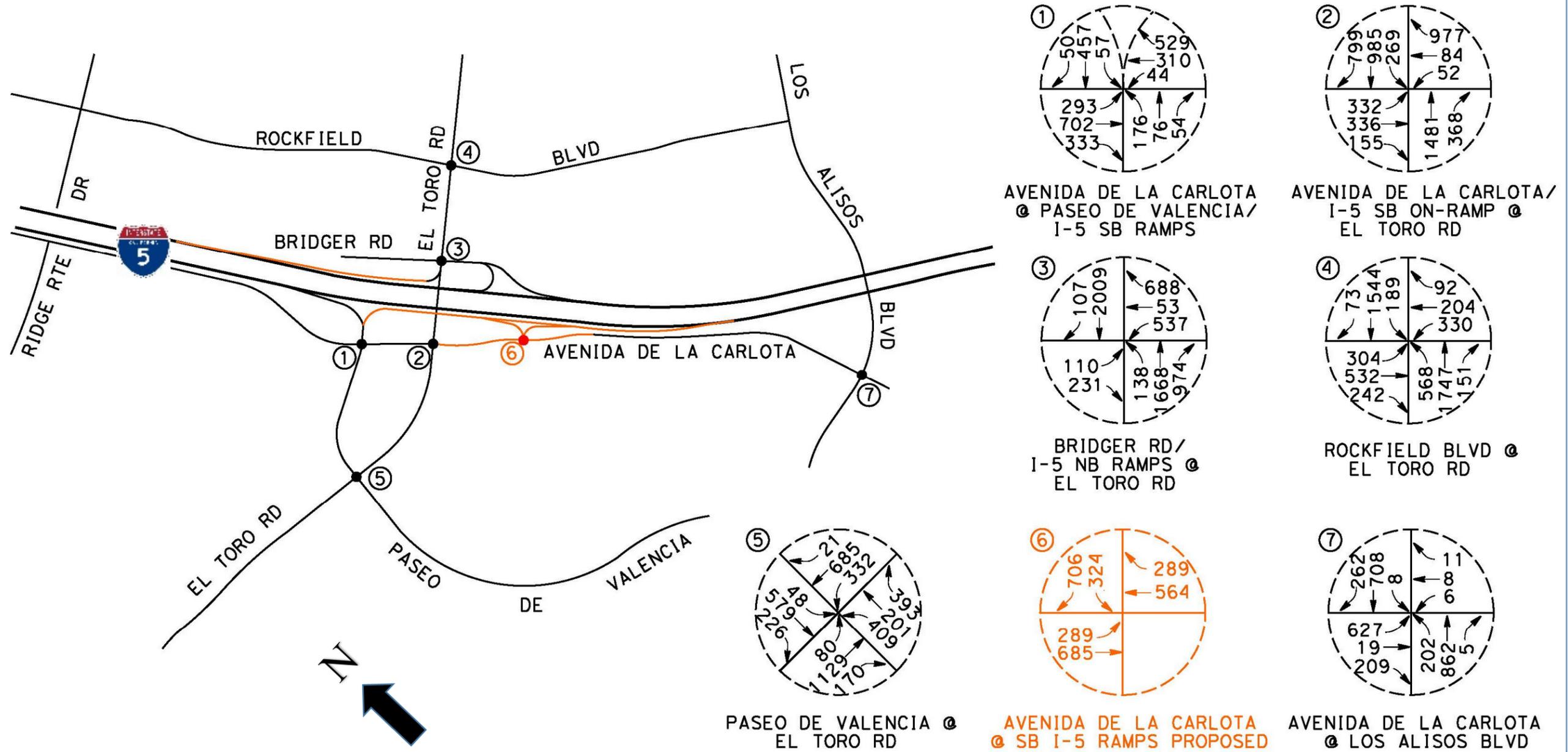
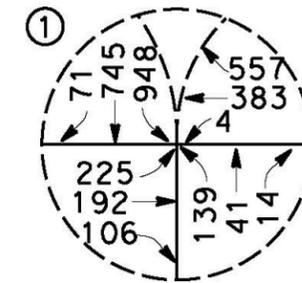
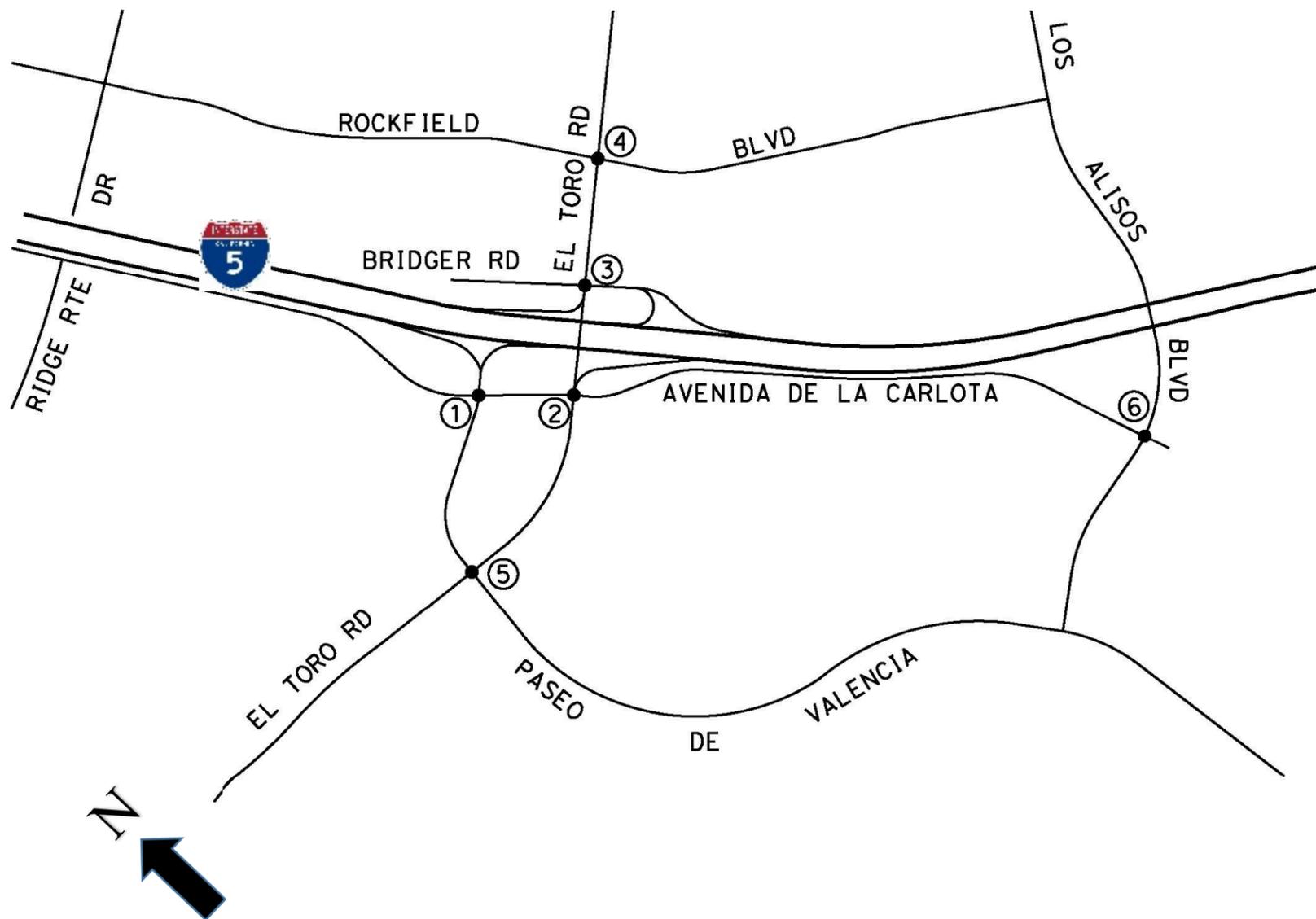
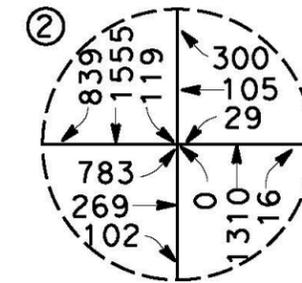




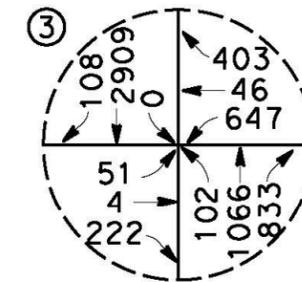
EXHIBIT G-1 No Build Design Year (2050) Intersection Turning Movement Volumes AM Peak Hour Volumes



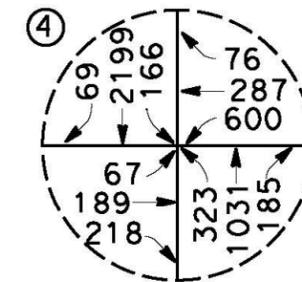
1 AVENIDA DE LA CARLOTA @ PASEO DE VALENCIA/ I-5 SB RAMPS



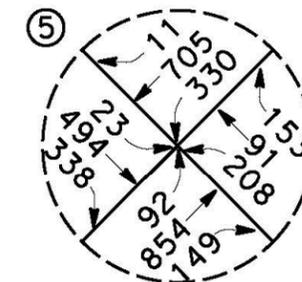
2 AVENIDA DE LA CARLOTA/ I-5 SB ON-RAMP @ EL TORO RD



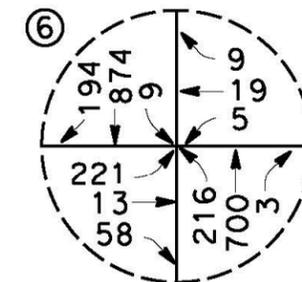
3 BRIDGER RD/ I-5 NB RAMPS @ EL TORO RD



4 ROCKFIELD BLVD @ EL TORO RD



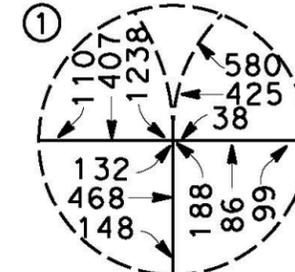
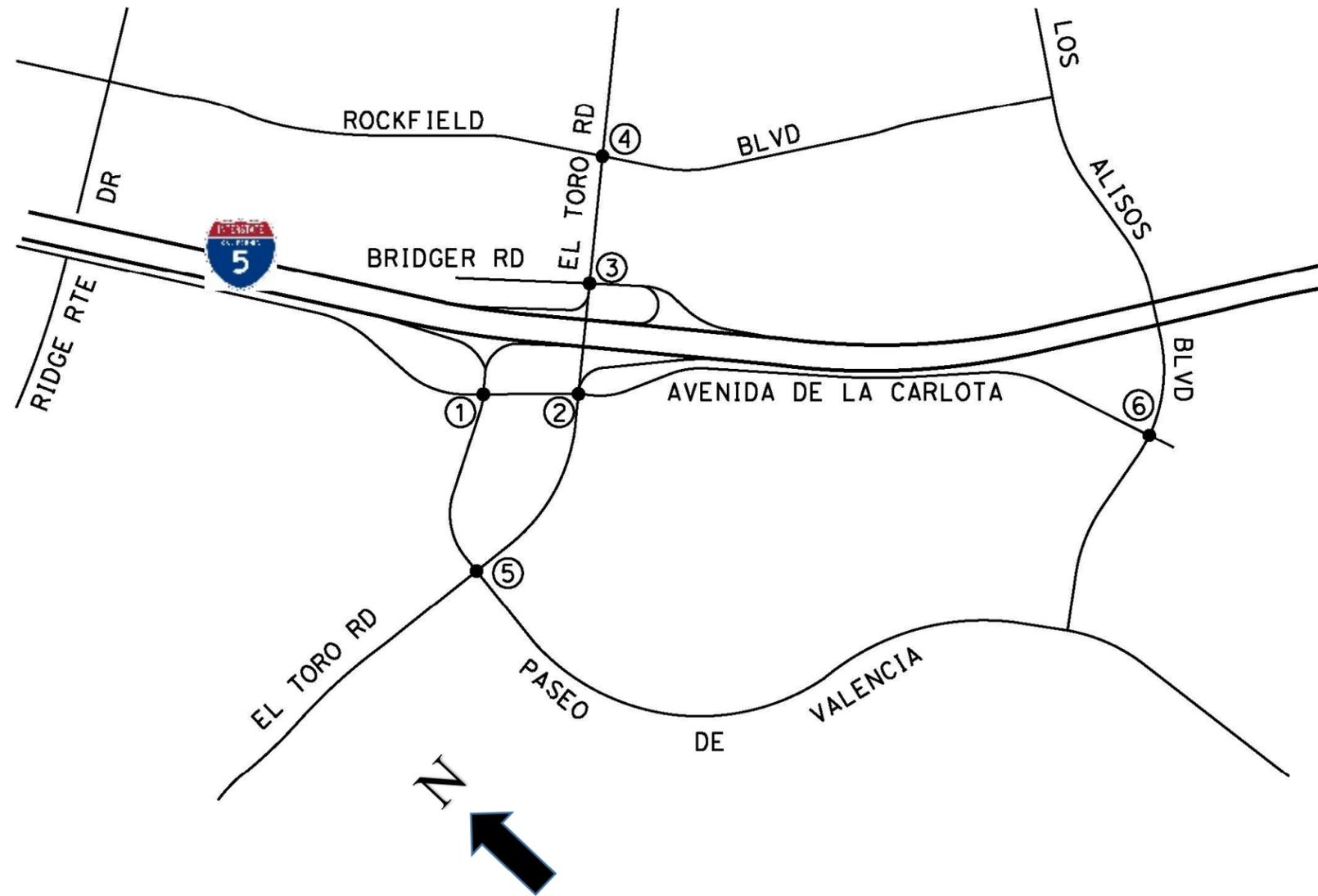
5 PASEO DE VALENCIA @ EL TORO RD



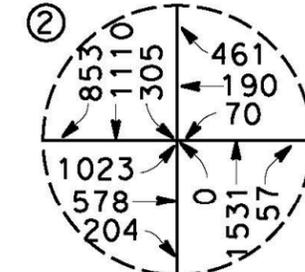
6 AVENIDA DE LA CARLOTA @ LOS ALISOS BLVD



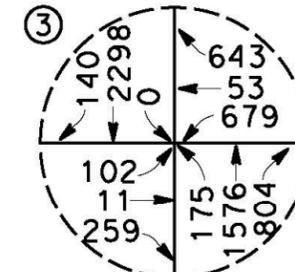
EXHIBIT G-2 No Build Design Year (2050) Intersection Turning Movement Volumes Mid-Day Peak Hour Volumes



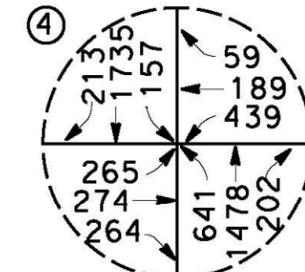
① AVENIDA DE LA CARLOTA @ PASEO DE VALENCIA / I-5 SB RAMPS



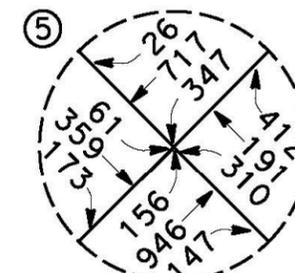
② AVENIDA DE LA CARLOTA / I-5 SB ON-RAMP @ EL TORO RD



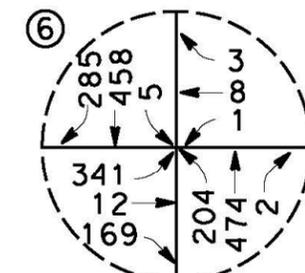
③ BRIDGER RD / I-5 NB RAMPS @ EL TORO RD



④ ROCKFIELD BLVD @ EL TORO RD



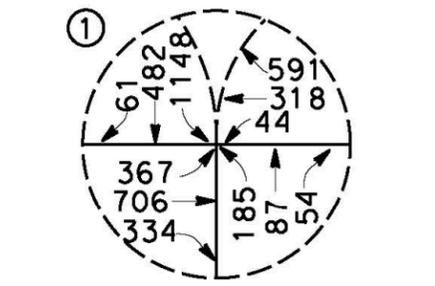
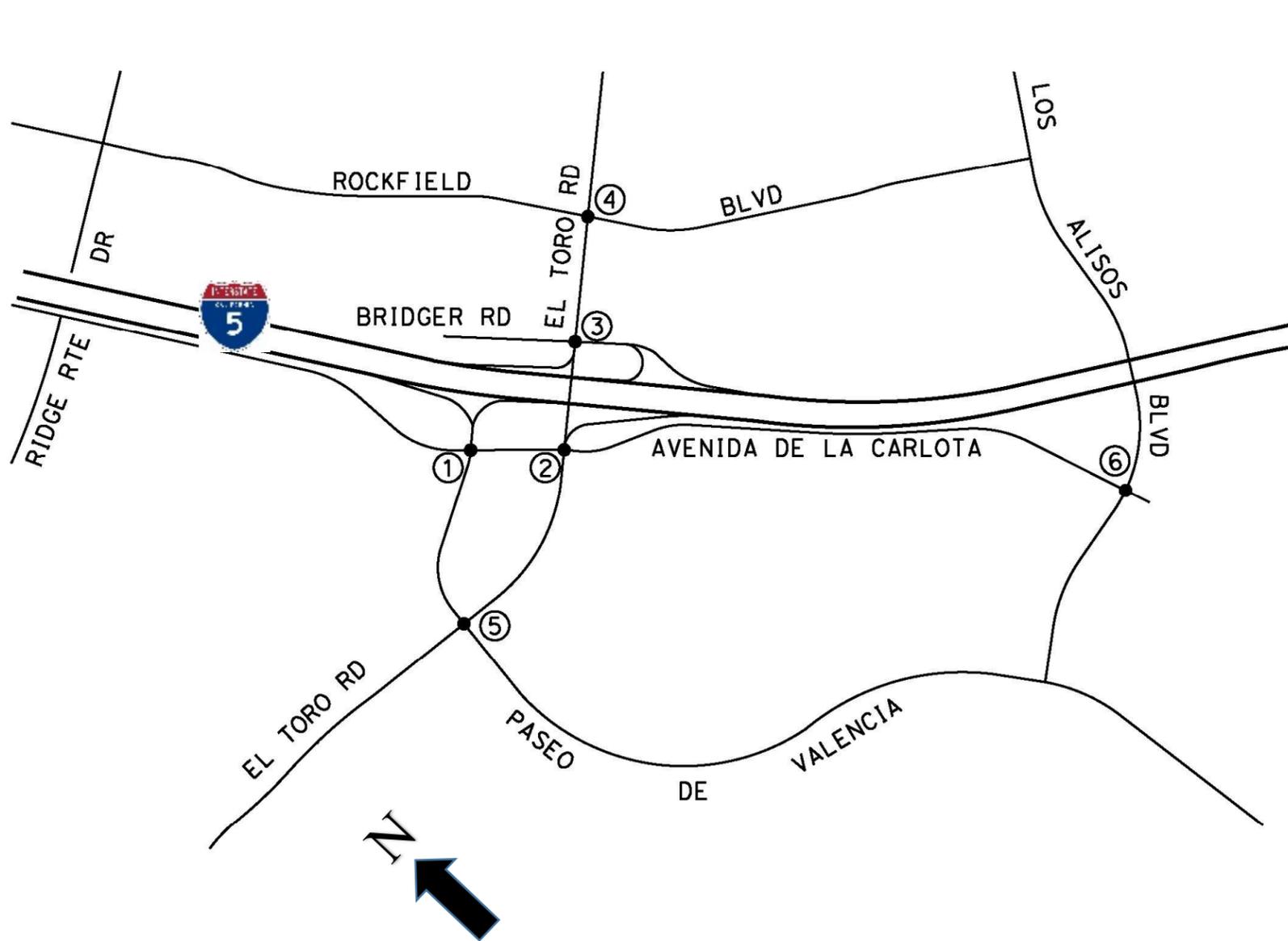
⑤ PASEO DE VALENCIA @ EL TORO RD



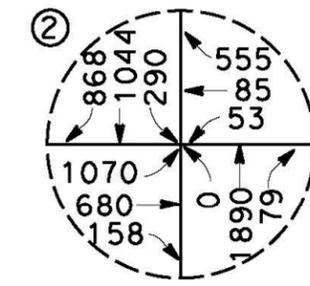
⑥ AVENIDA DE LA CARLOTA @ LOS ALISOS BLVD



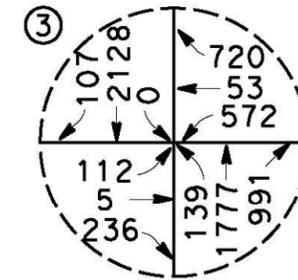
EXHIBIT G-3 No Build Design Year (2050) Intersection Turning Movement Volumes PM Peak Hour Volumes



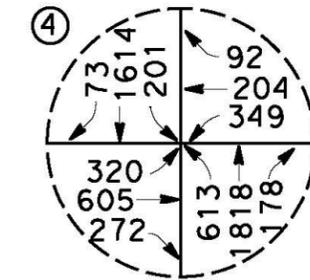
① AVENIDA DE LA CARLOTA @ PASEO DE VALENCIA / I-5 SB RAMPS



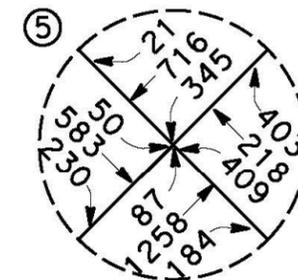
② AVENIDA DE LA CARLOTA / I-5 SB ON-RAMP @ EL TORO RD



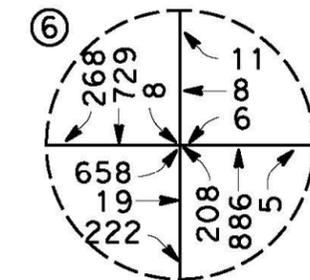
③ BRIDGER RD / I-5 NB RAMPS @ EL TORO RD



④ ROCKFIELD BLVD @ EL TORO RD



⑤ PASEO DE VALENCIA @ EL TORO RD



⑥ AVENIDA DE LA CARLOTA @ LOS ALISOS BLVD



EXHIBIT H-1 Alternative 1 Design Year (2050) Intersection Turning Movement Volumes AM Peak Hour Volumes

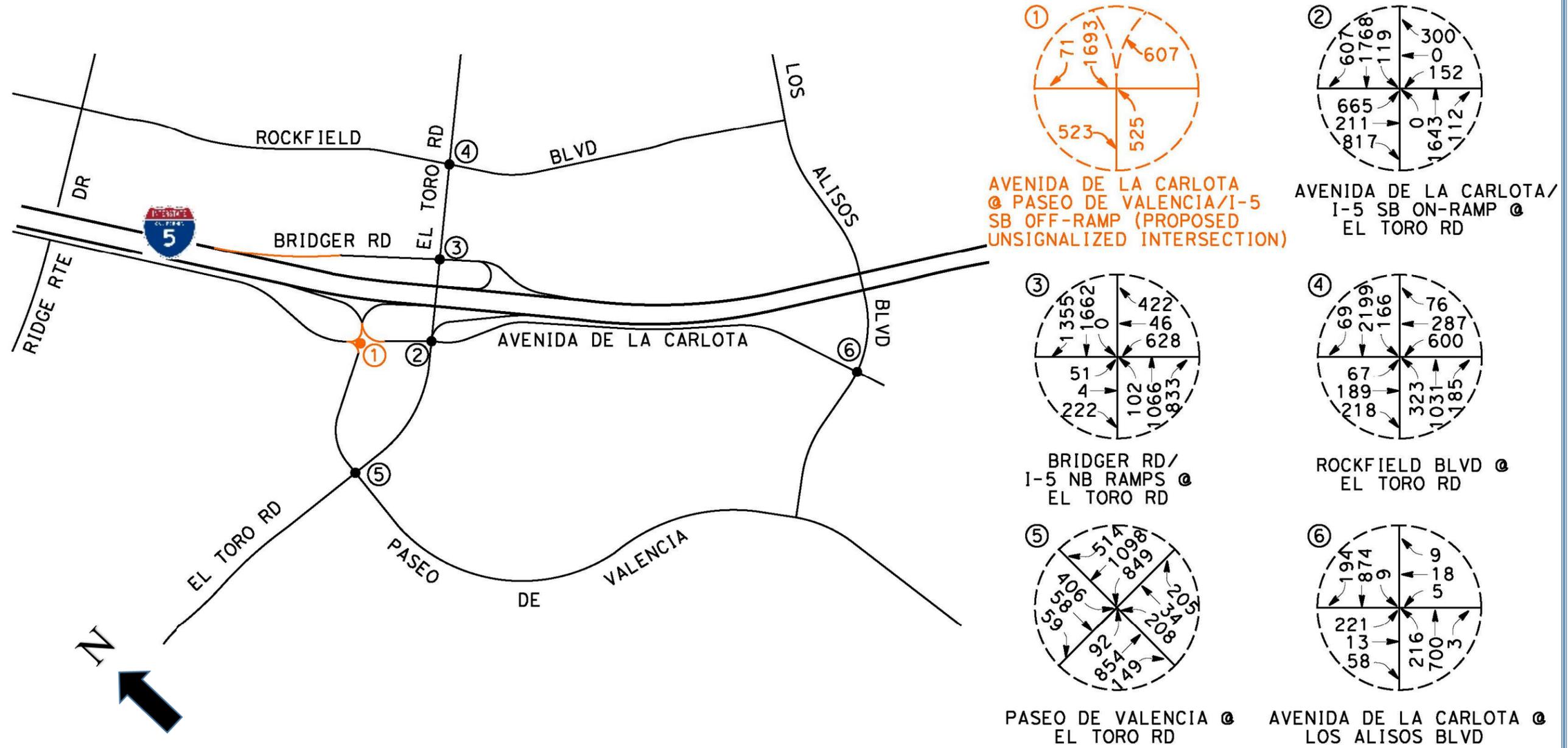




EXHIBIT H-2 Alternative 1 Design Year (2050) Intersection Turning Movement Volumes Mid-Day Peak Hour Volumes

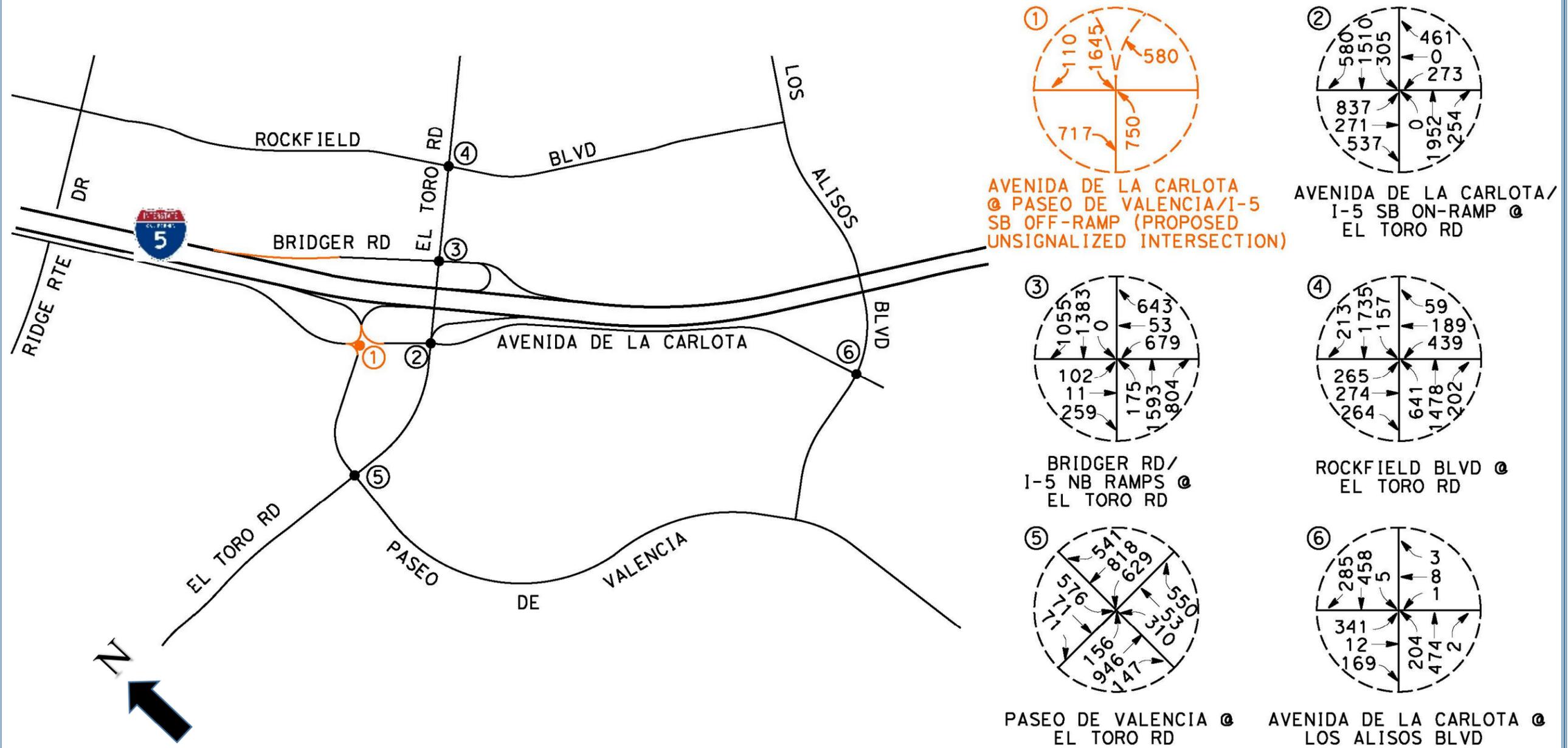




EXHIBIT H-3 Alternative 1 Design Year (2050) Intersection Turning Movement Volumes PM Peak Hour Volumes

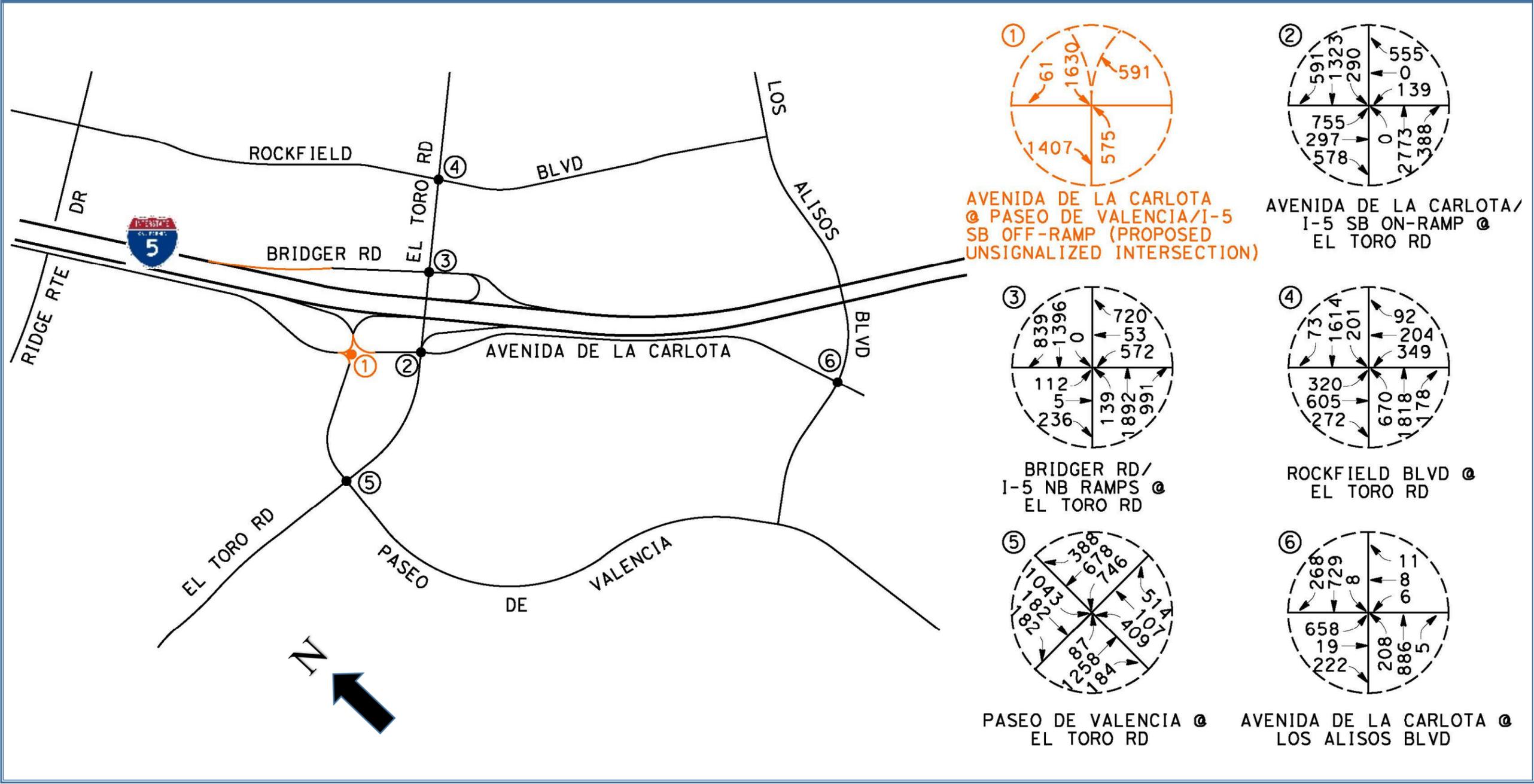




EXHIBIT J-1 Alternative 2 Design Year (2050) Intersection Turning Movement Volumes AM Peak Hour Volumes

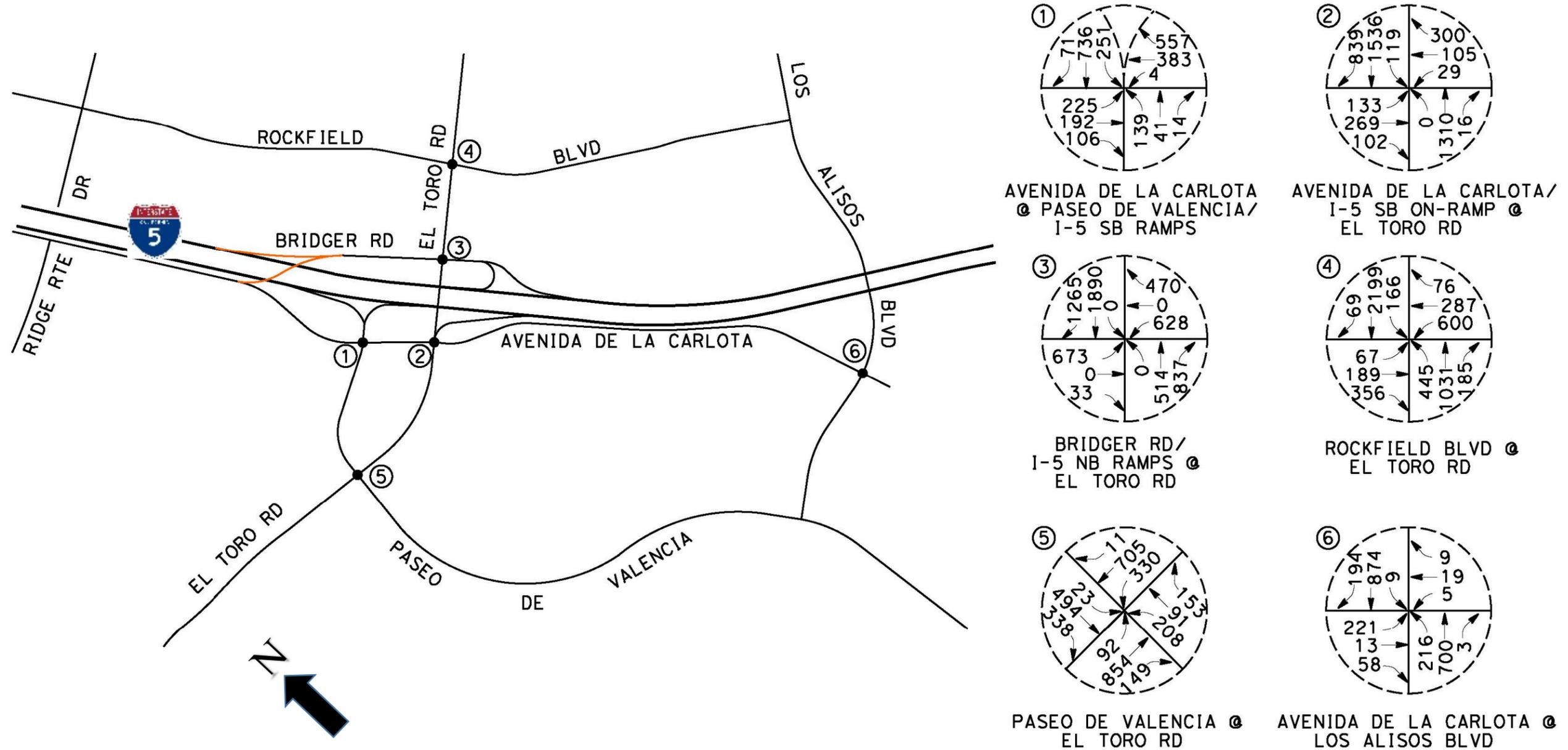




EXHIBIT J-2 Alternative 2 Design Year (2050) Intersection Turning Movement Volumes Mid-Day Peak Hour Volumes

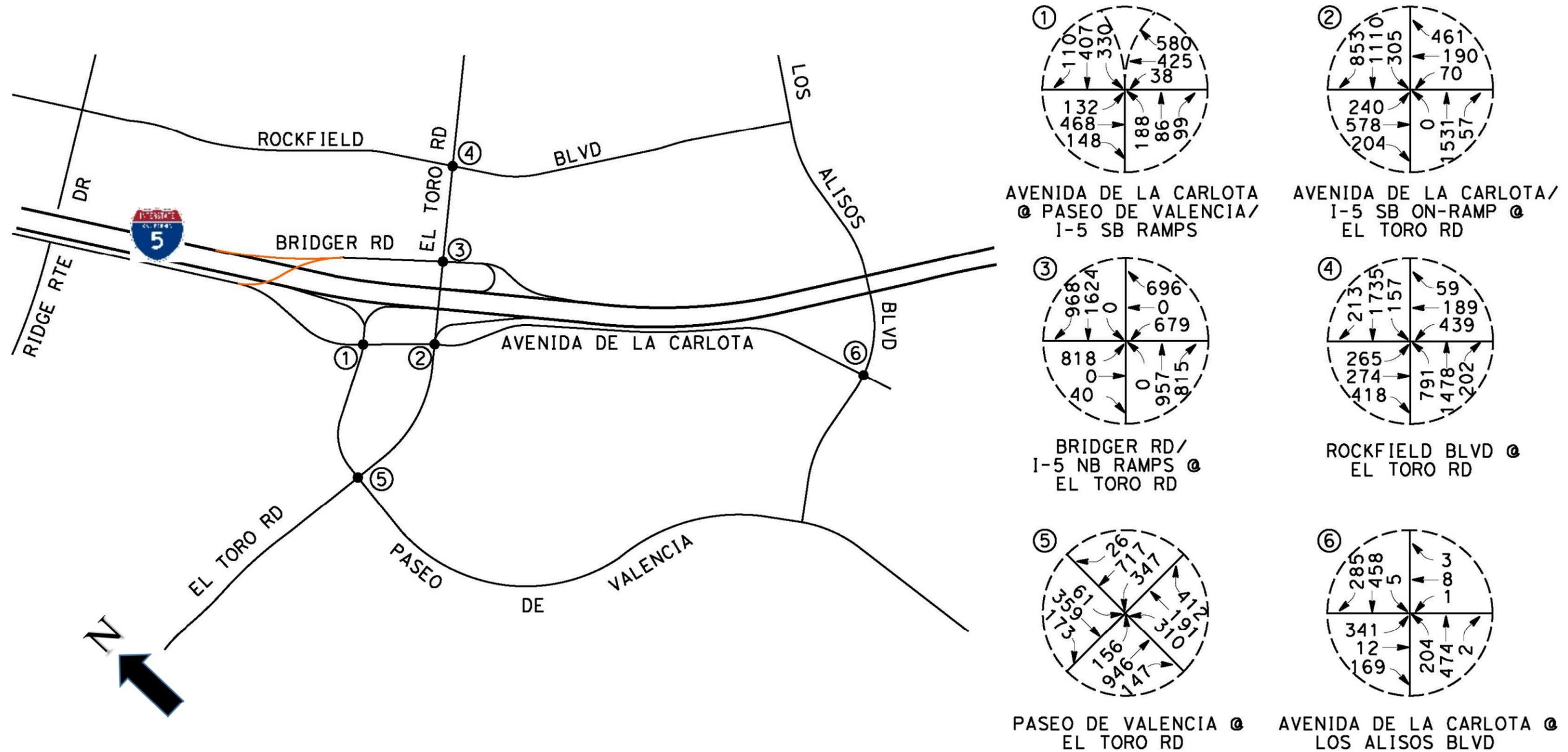




EXHIBIT J-3 Alternative 2 Design Year (2050) Intersection Turning Movement Volumes PM Peak Hour Volumes

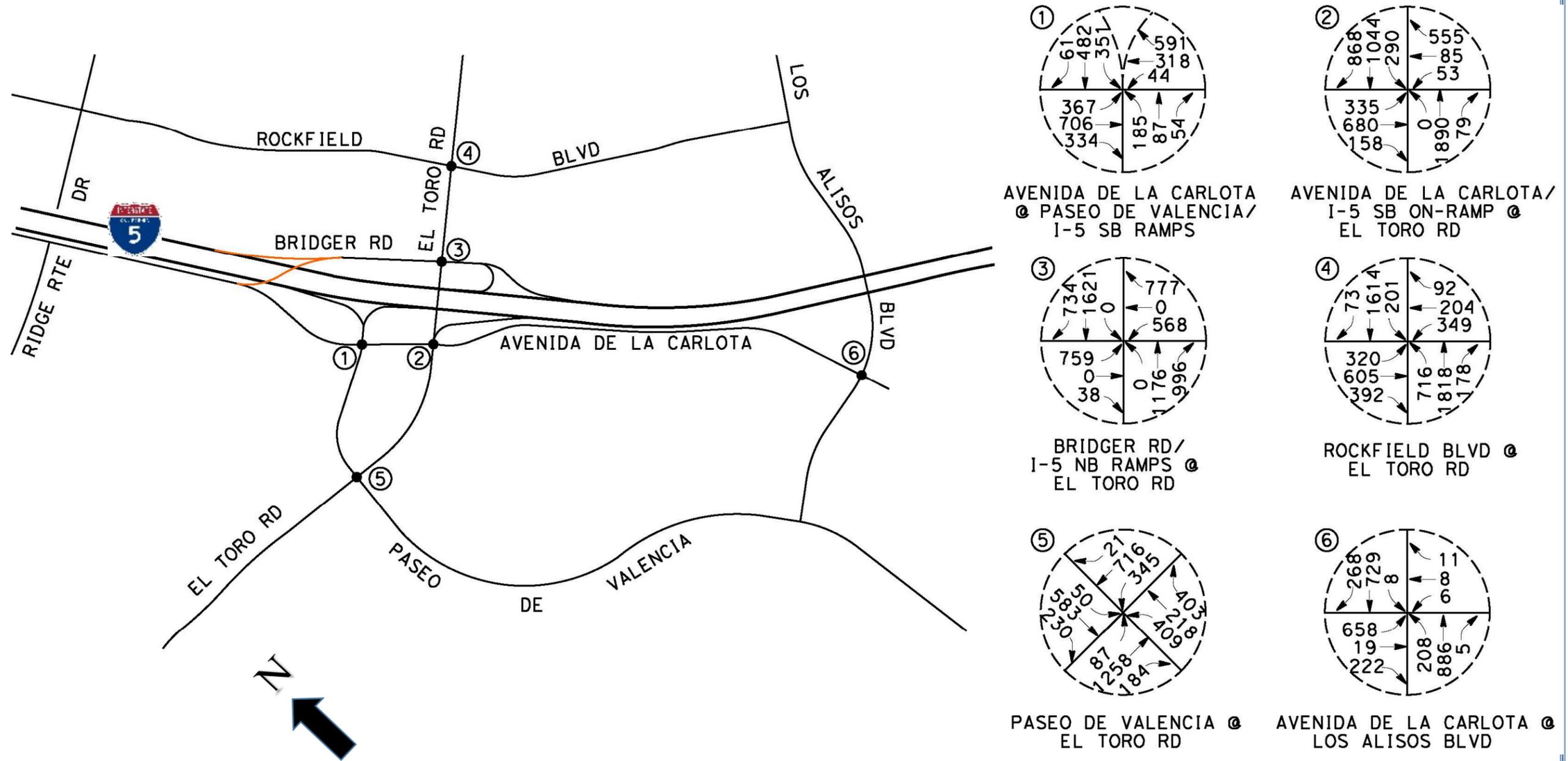




EXHIBIT K-1 Alternative 3 Design Year (2050) Intersection Turning Movement Volumes AM Peak Hour Volumes

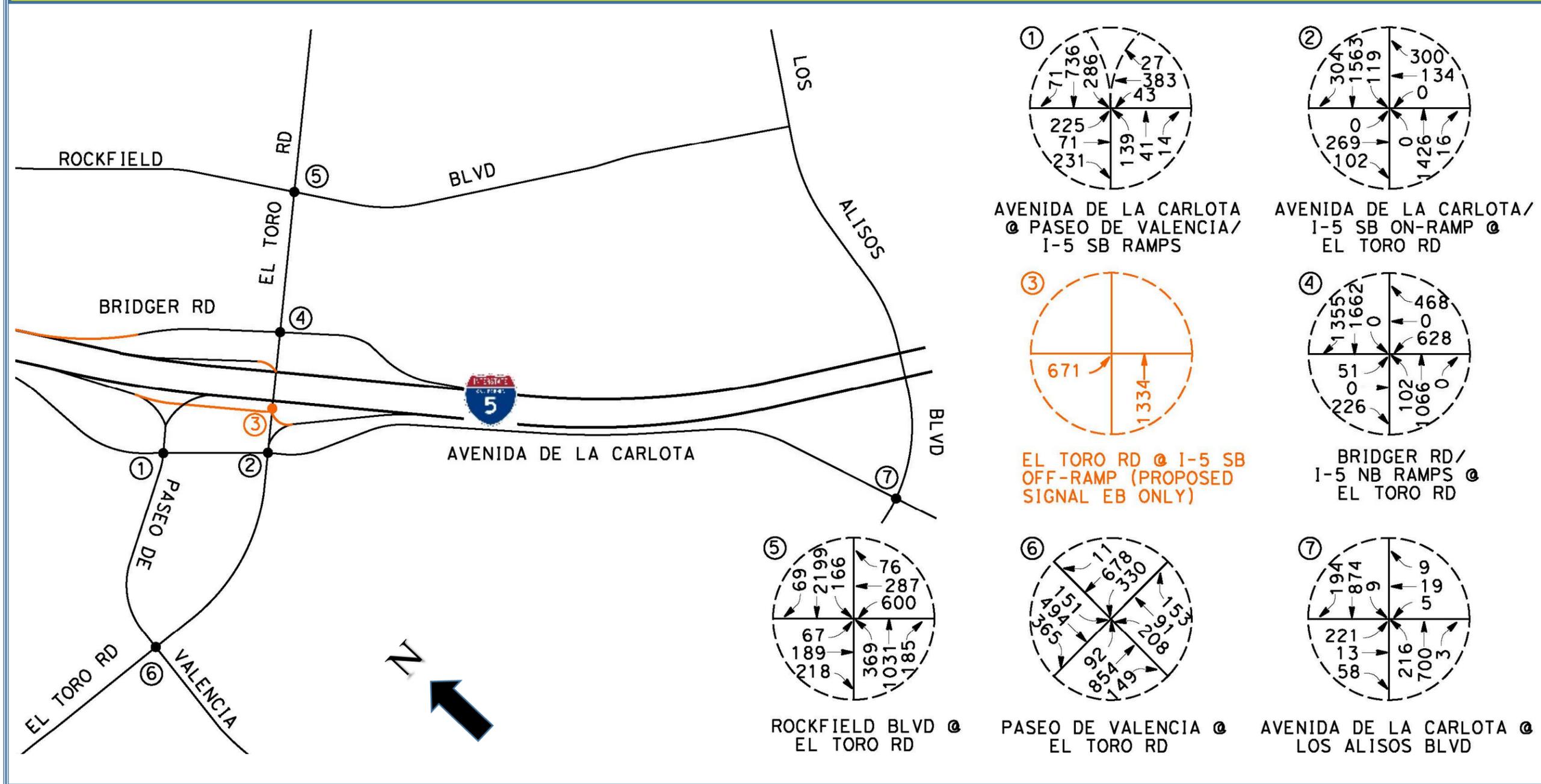




EXHIBIT K-2 Alternative 3 Design Year (2050) Intersection Turning Movement Volumes Mid-Day Peak Hour Volumes

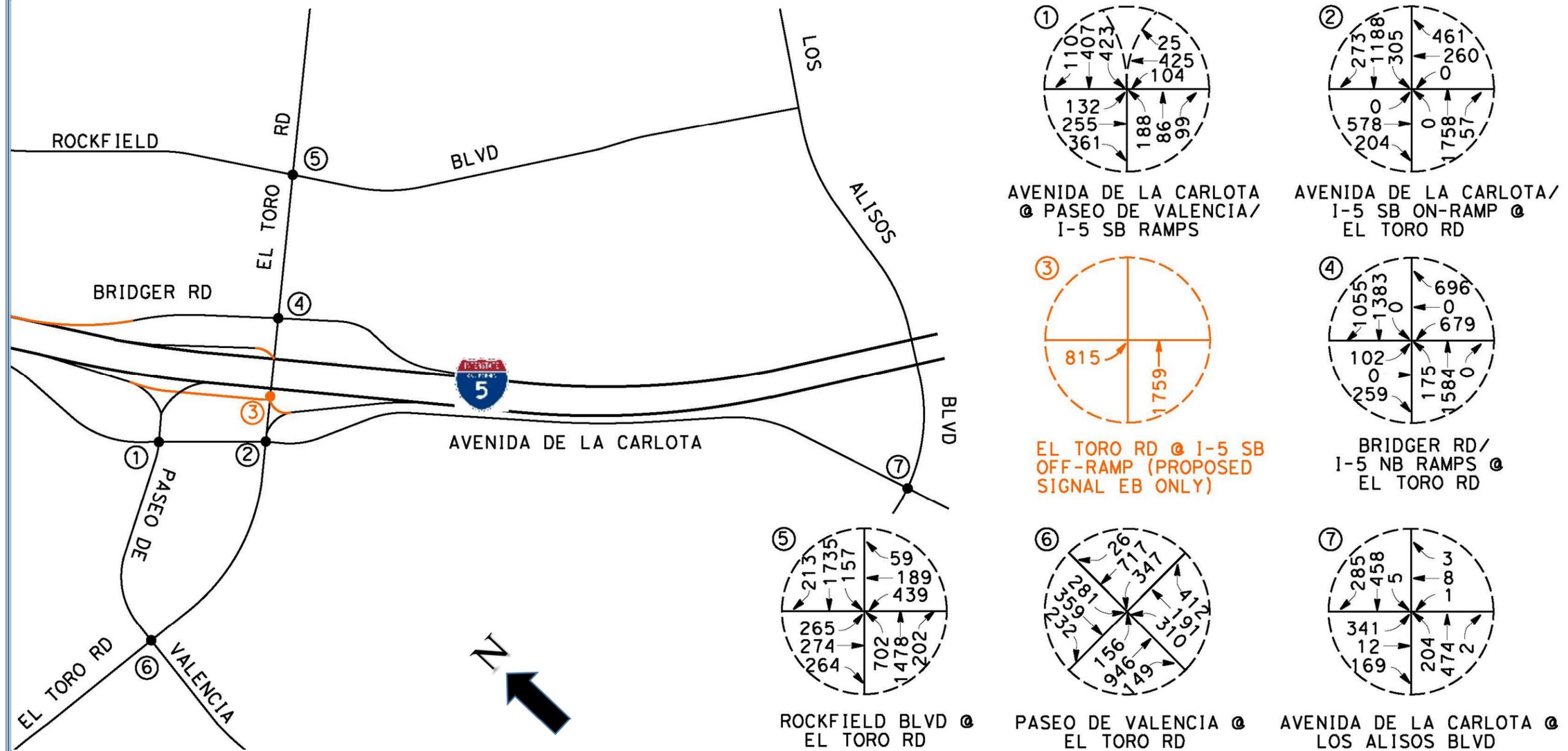
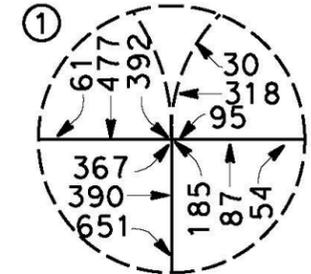
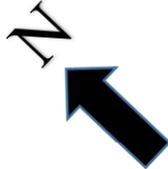
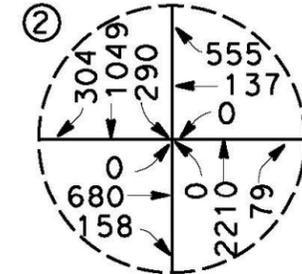




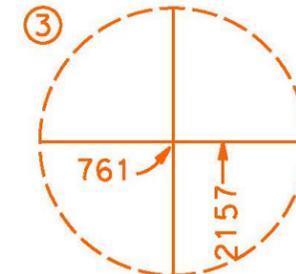
EXHIBIT K-3 Alternative 3 Design Year (2050) Intersection Turning Movement Volumes PM Peak Hour Volumes



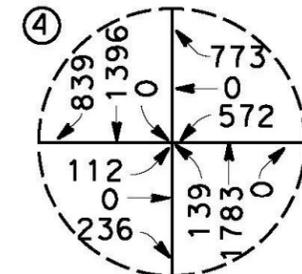
1 AVENIDA DE LA CARLOTA @ PASEO DE VALENCIA / I-5 SB RAMPS



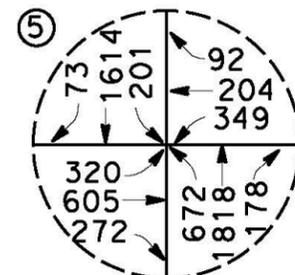
2 AVENIDA DE LA CARLOTA / I-5 SB ON-RAMP @ EL TORO RD



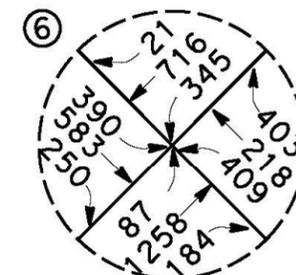
3 EL TORO RD @ I-5 SB OFF-RAMP (PROPOSED SIGNAL EB ONLY)



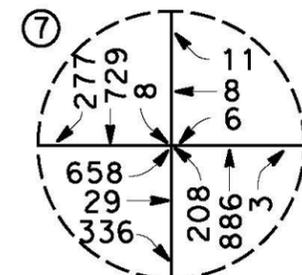
4 BRIDGER RD / I-5 NB RAMPS @ EL TORO RD



5 ROCKFIELD BLVD @ EL TORO RD



6 PASEO DE VALENCIA @ EL TORO RD



7 AVENIDA DE LA CARLOTA @ LOS ALISOS BLVD



EXHIBIT L-1 Alternative 4 Design Year (2050) Intersection Turning Movement Volumes AM Peak Hour Volumes

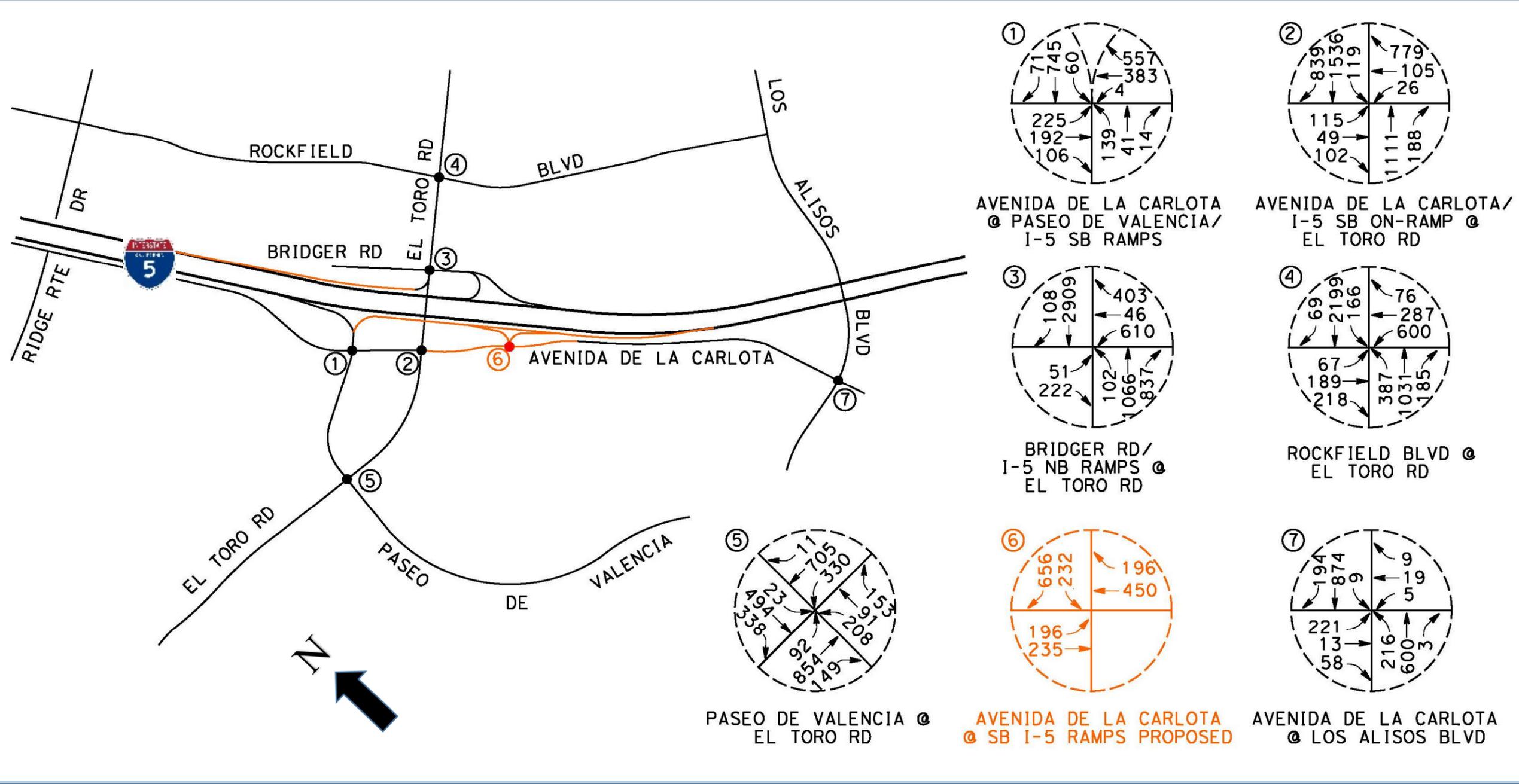




EXHIBIT L-2 Alternative 4 Design Year (2050) Intersection Turning Movement Volumes Mid-Day Peak Hour Volumes

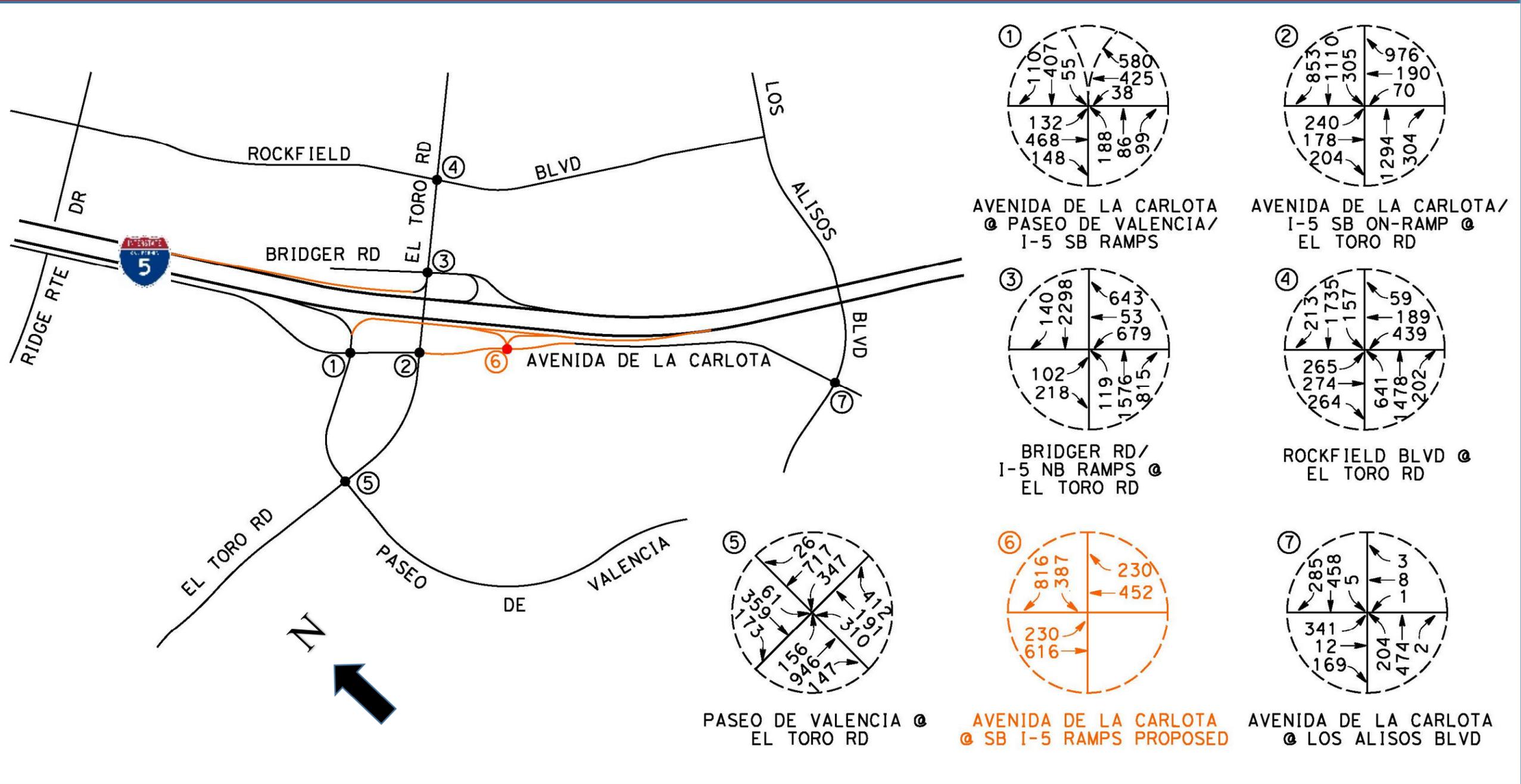
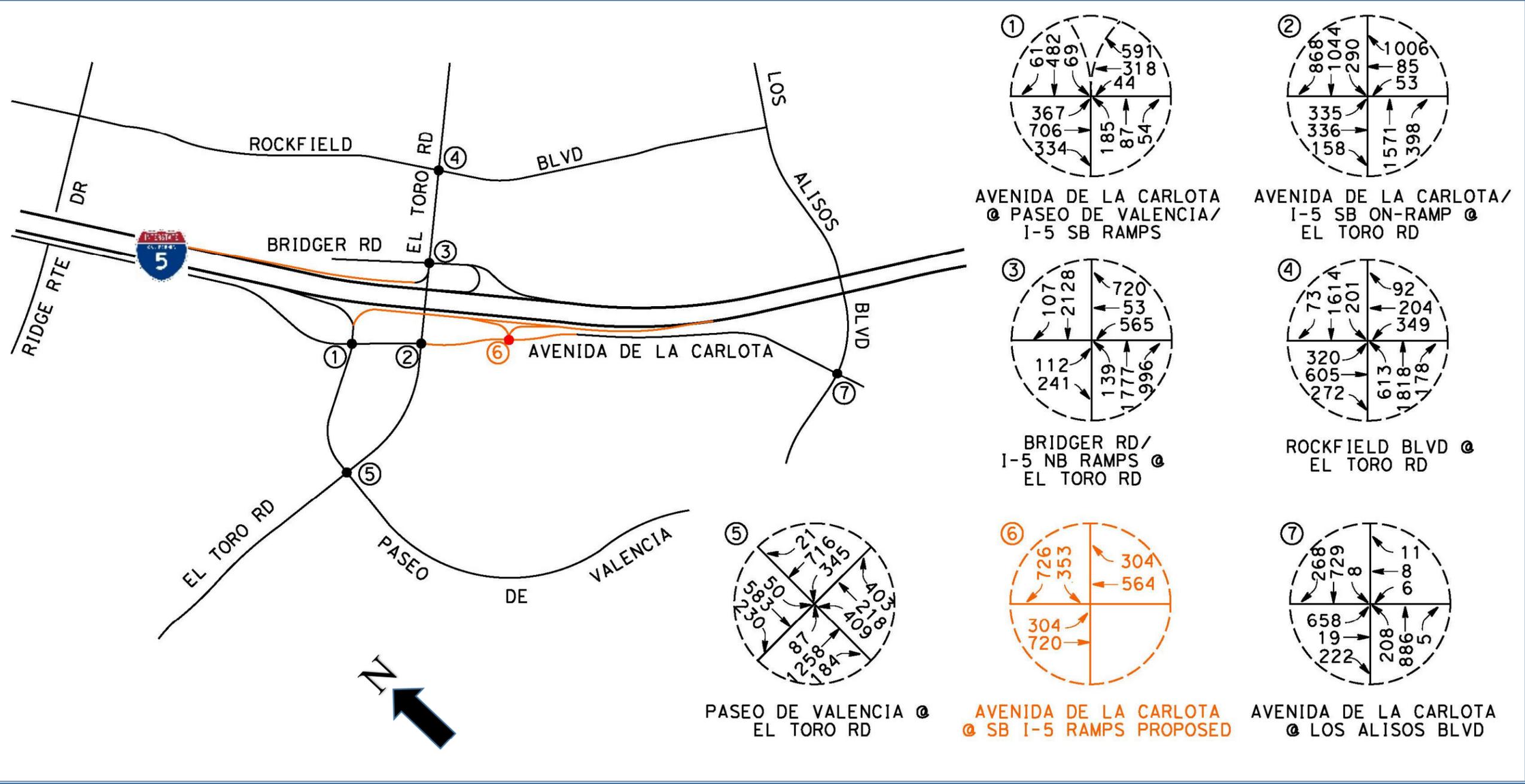




EXHIBIT L-3 Alternative 4 Design Year (2050) Intersection Turning Movement Volumes PM Peak Hour Volumes

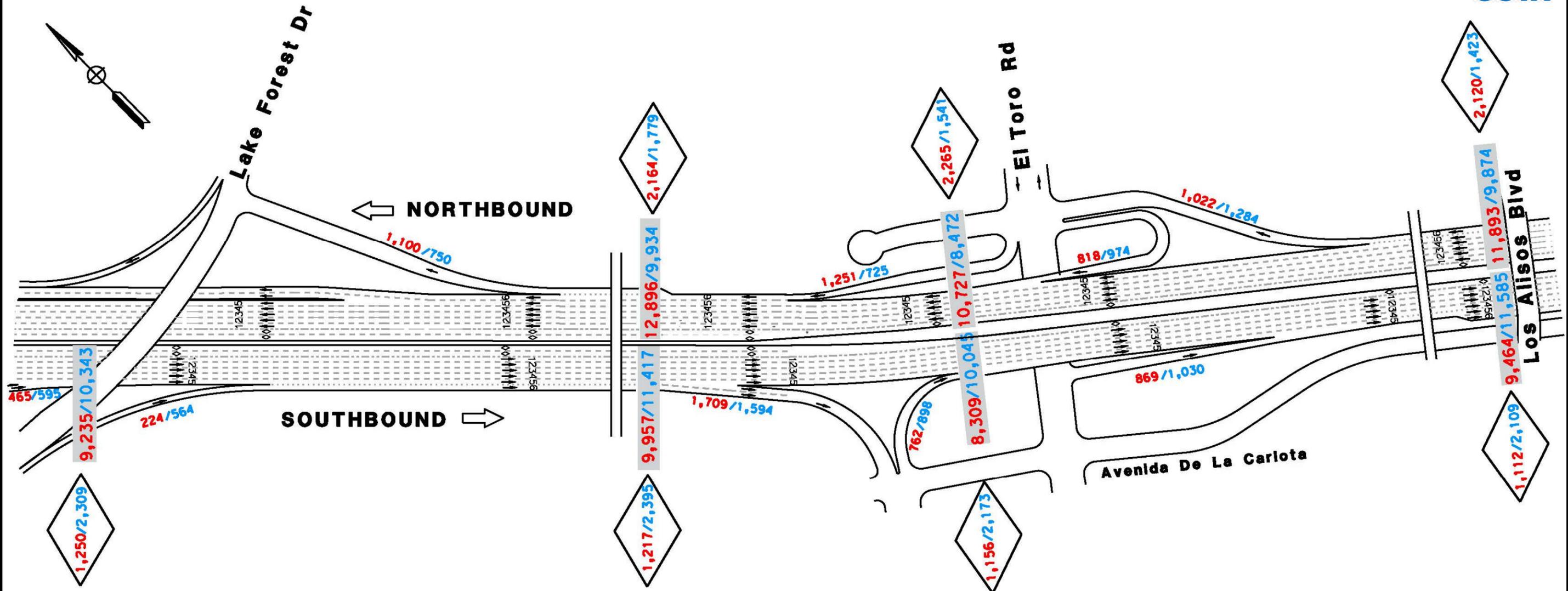


APPENDIX B: FREEWAY FACILITY VOLUME EXHIBITS

**EXISTING, OPENING YEAR (2030) AND DESIGN YEAR (2050)
FOR DESIGN ALTERNATIVES 1, 2, 3 AND 4**



Existing (2017) Freeway Traffic Volumes and Lane Configuration AM/PM Peak Hours



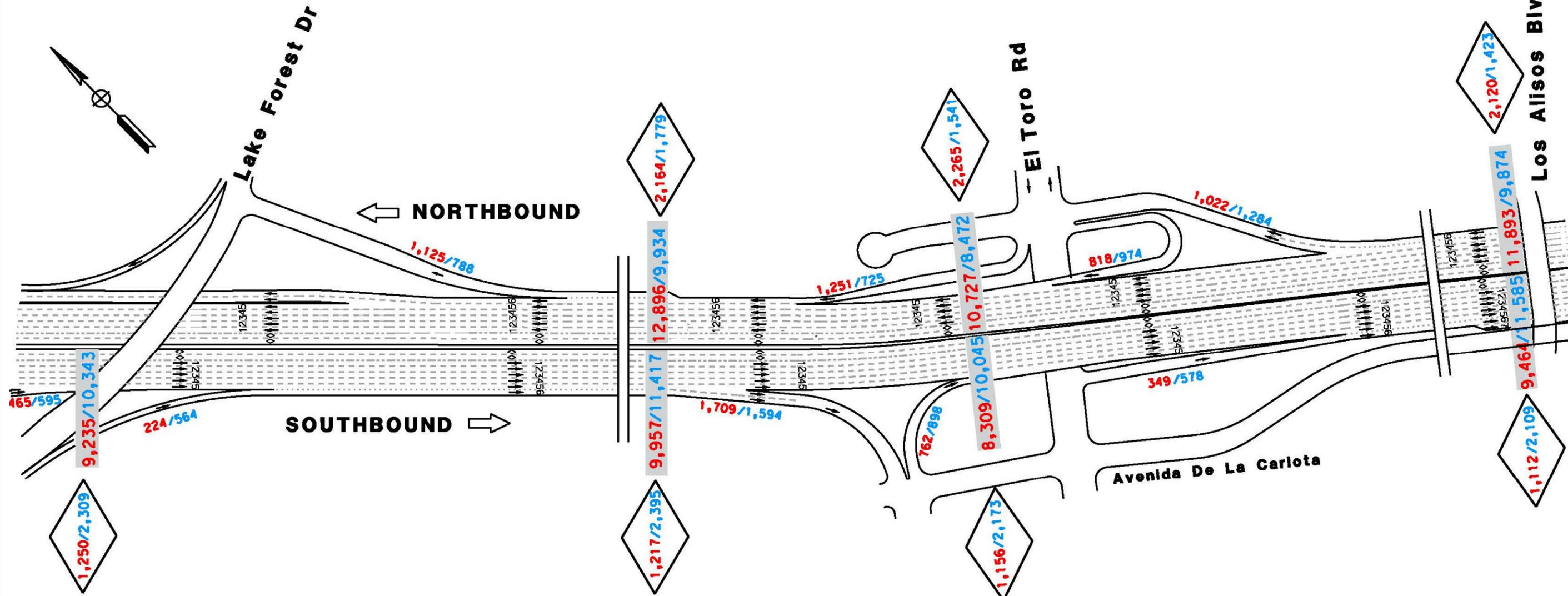
LEGEND:

- AM/PM = 2017 General Purpose Lane Traffic Volume
- AM/PM = 2017 HOV Traffic Volume
- AM/PM = 2017 Ramp Volume Traffic

EXHIBIT M-1



No Build (2030) Freeway Traffic Volumes and Lane Configuration AM/PM Peak Hours



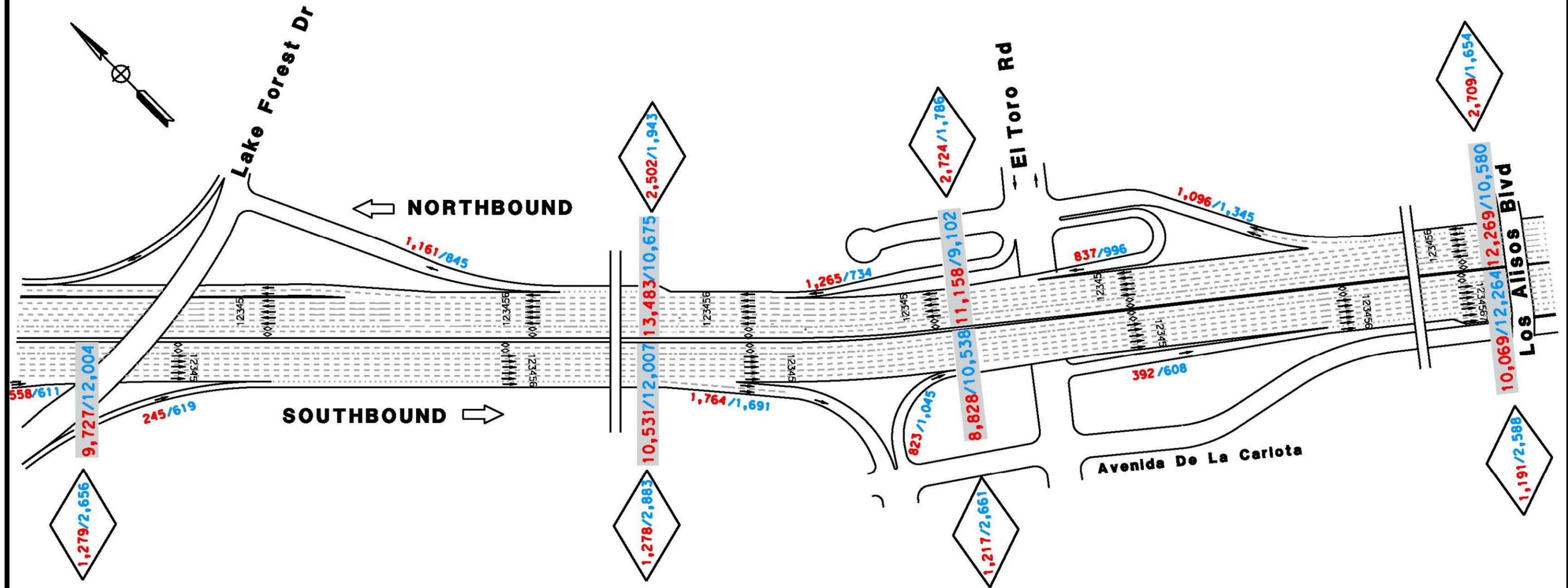
LEGEND:

- AM/PM = 2030 General Purpose Lane Traffic Volume
- AM/PM = 2030 HOV Traffic Volume
- AM/PM = 2030 Ramp Volume Traffic

EXHIBIT M-2



No Build (2050) Freeway Traffic Volumes and Lane Configuration AM/PM Peak Hours



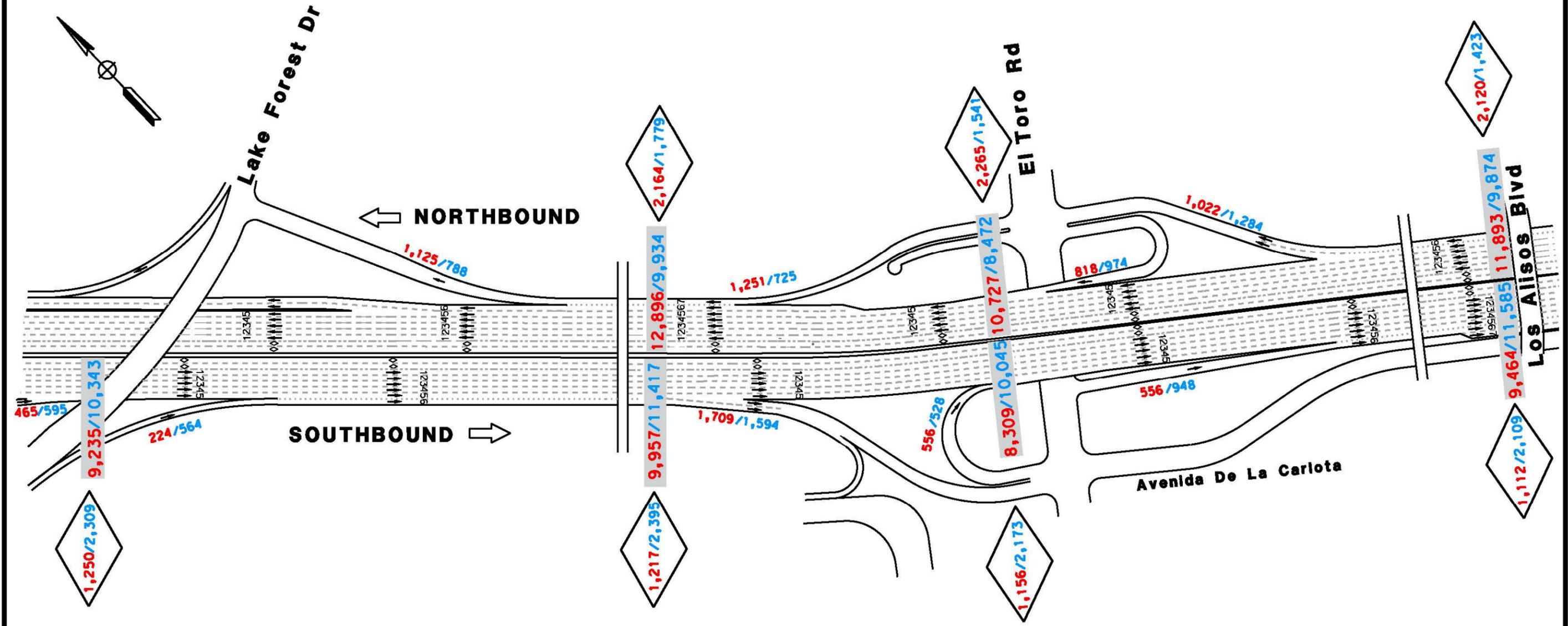
LEGEND:

- AM/PM = 2050 General Purpose Lane Traffic Volume
- AM/PM = 2050 HOV Traffic Volume
- AM/PM = 2050 Ramp Volume Traffic

EXHIBIT M-3



Alternative 1 (2030) Freeway Traffic Volumes and Lane Configuration AM/PM Peak Hours



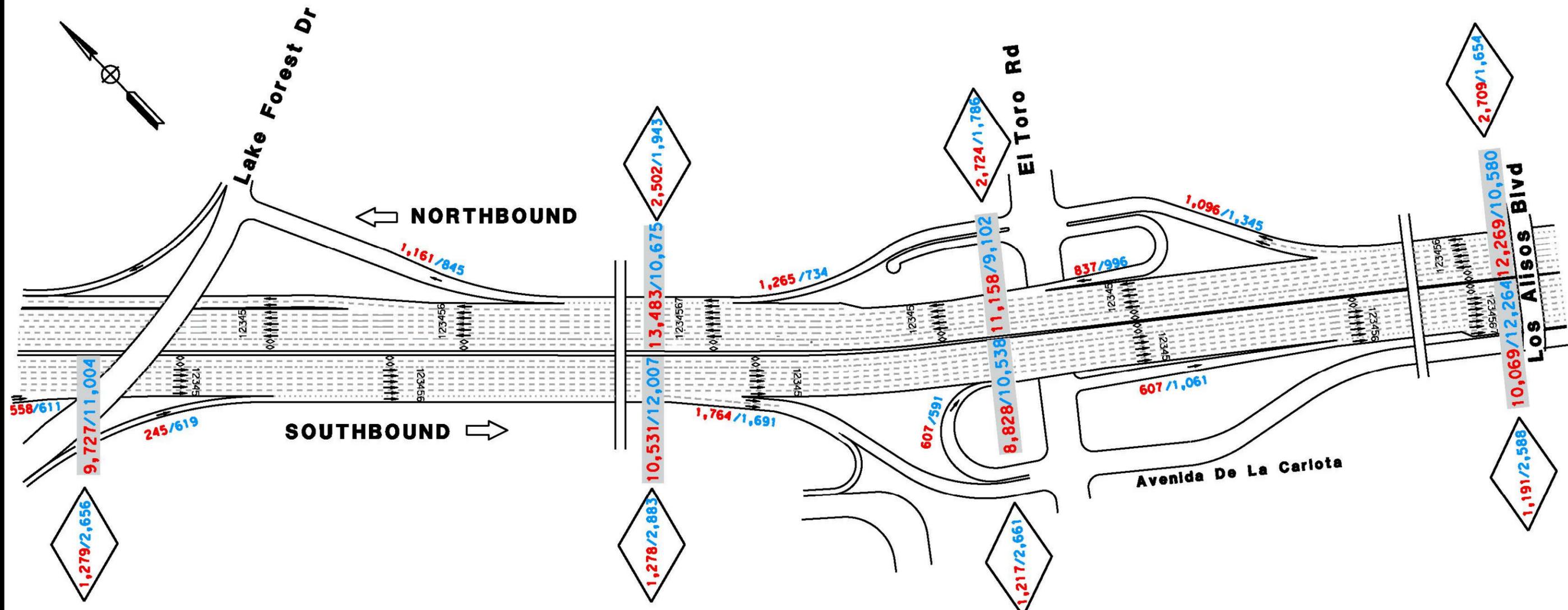
LEGEND:

- AM/PM = 2030 General Purpose Lane Traffic Volume
- AM/PM = 2030 HOV Traffic Volume
- AM/PM = 2030 Ramp Volume Traffic

EXHIBIT N-1



Alternative 1 (2050) Freeway Traffic Volumes and Lane Configuration AM/PM Peak Hours



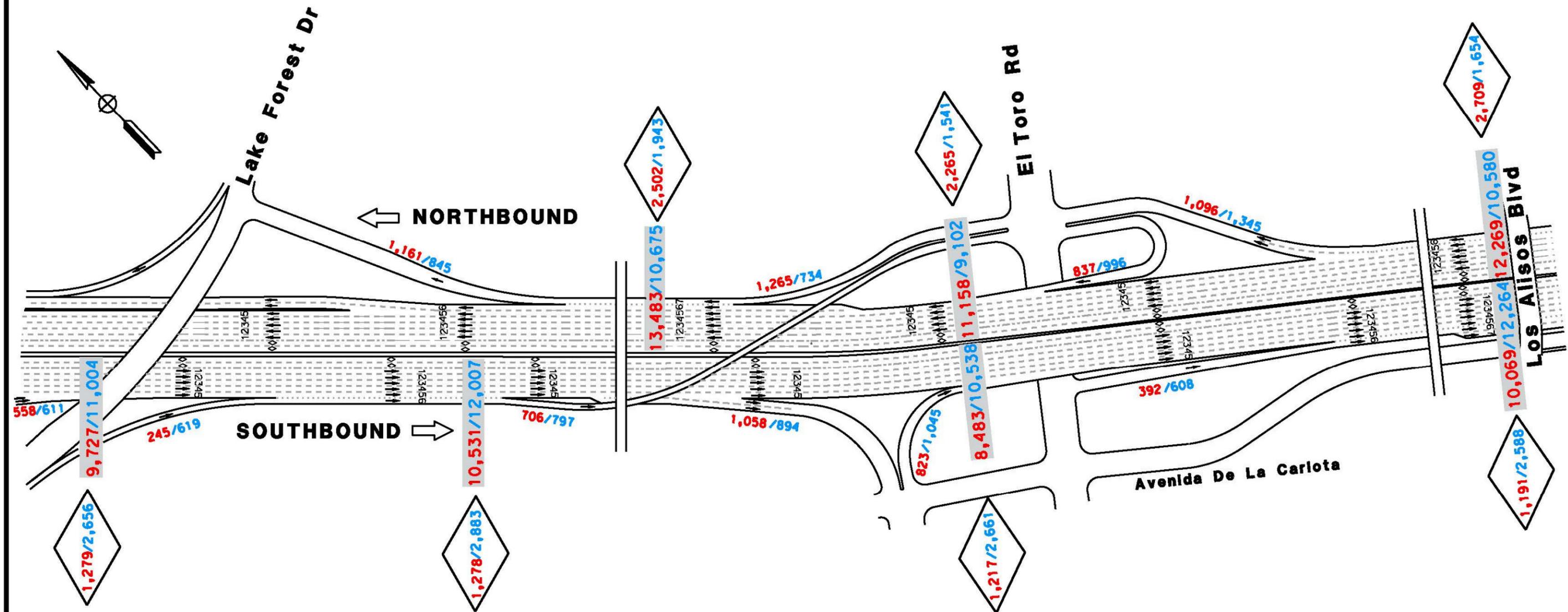
LEGEND:

- AM/PM = 2050 General Purpose Lane Traffic Volume
- AM/PM = 2050 HOV Traffic Volume
- AM/PM = 2050 Ramp Volume Traffic

EXHIBIT N-2



Alternative 2 (2050) Freeway Traffic Volumes and Lane Configuration AM/PM Peak Hours



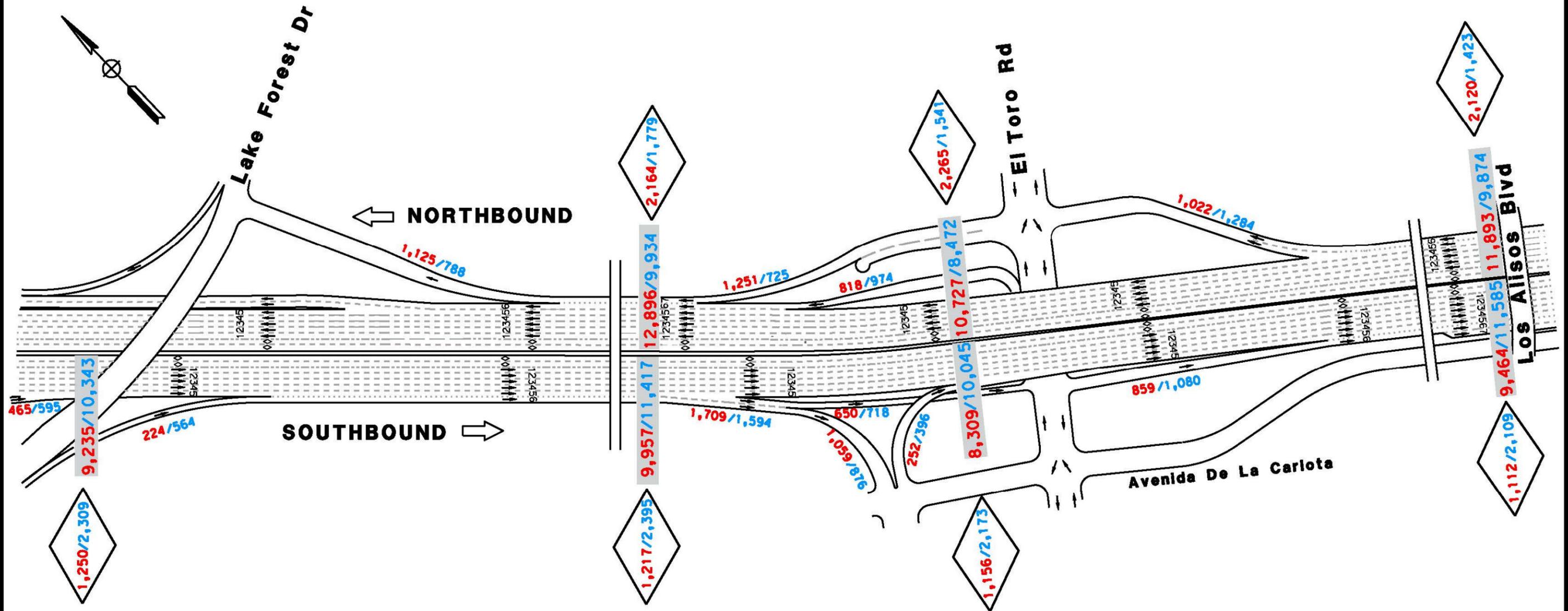
LEGEND:

- AM/PM = 2050 General Purpose Lane Traffic Volume
- AM/PM = 2050 HOV Traffic Volume
- AM/PM = 2050 Ramp Volume Traffic

EXHIBIT O-2



Alternative 3 (2030) Freeway Traffic Volumes and Lane Configuration AM/PM Peak Hours



LEGEND:

- AM/PM = 2030 General Purpose Lane Traffic Volume
- AM/PM = 2030 HOV Traffic Volume
- AM/PM = 2030 Ramp Volume Traffic

EXHIBIT P-1



Alternative 3 (2050) Freeway Traffic Volumes and Lane Configuration AM/PM Peak Hours

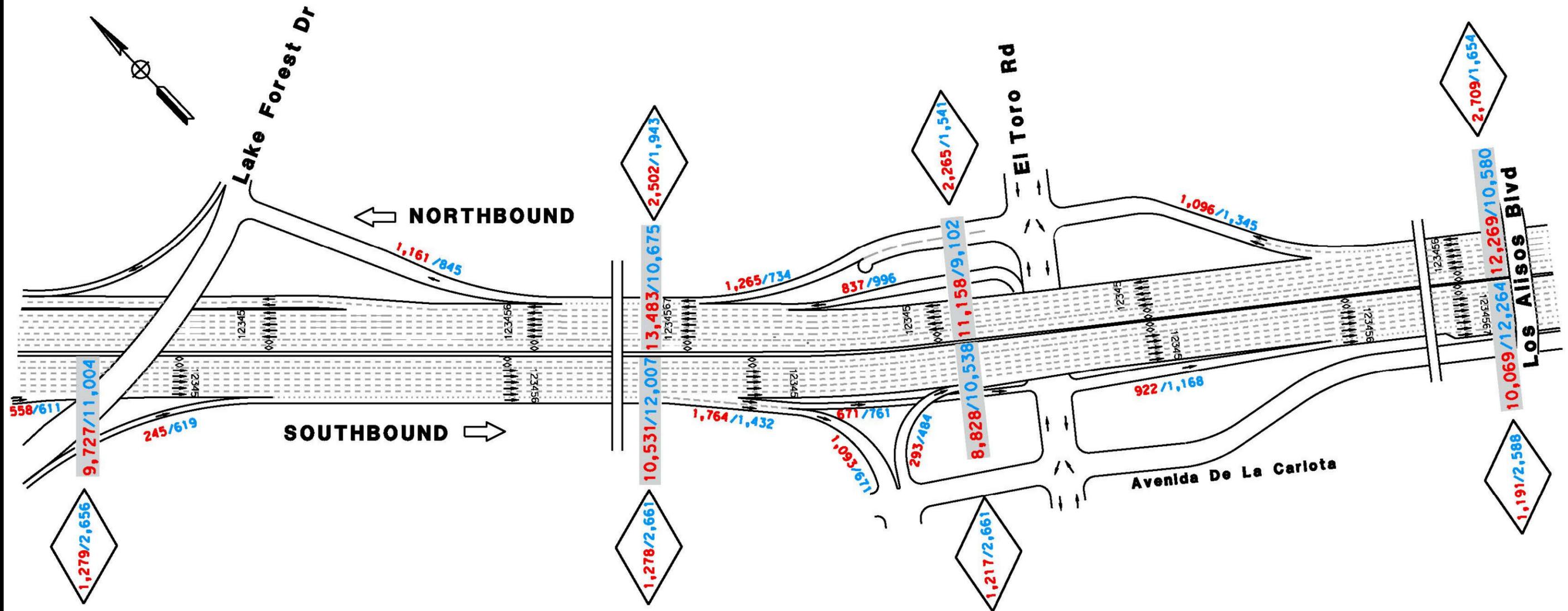
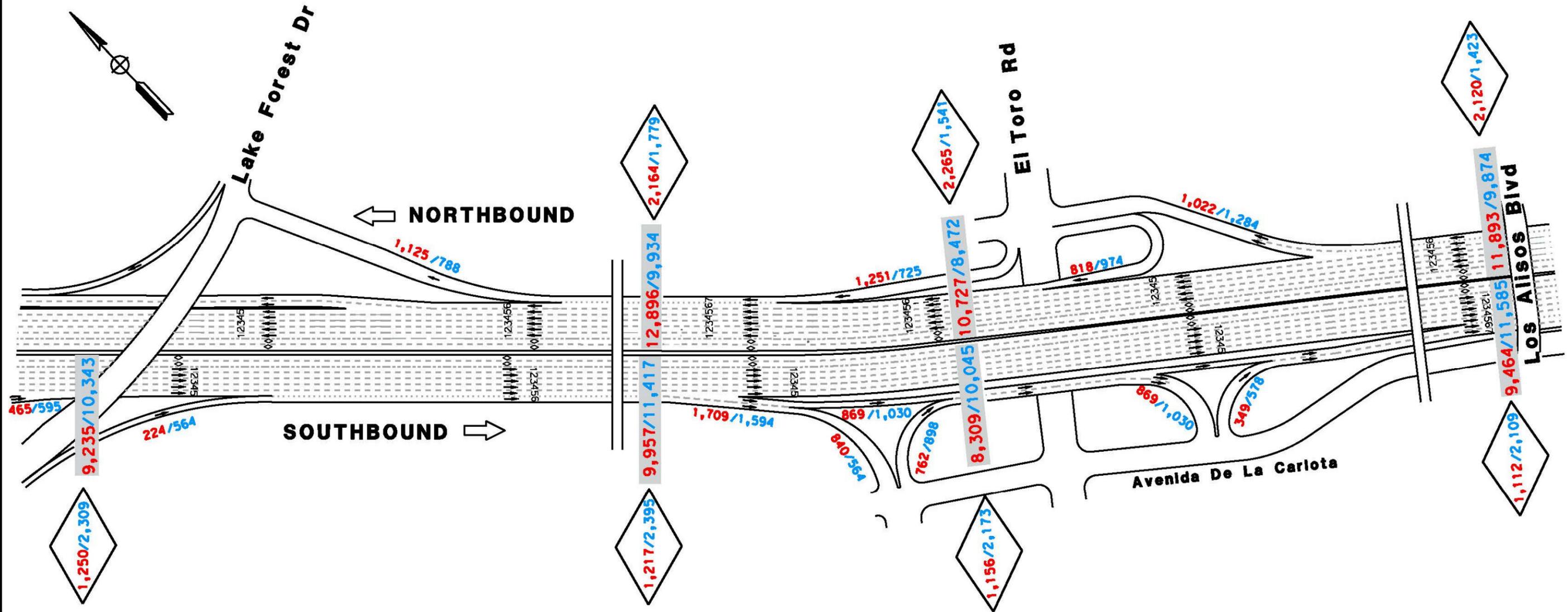


EXHIBIT P-2



Alternative 4 (2030) Freeway Traffic Volumes and Lane Configuration AM/PM Peak Hours



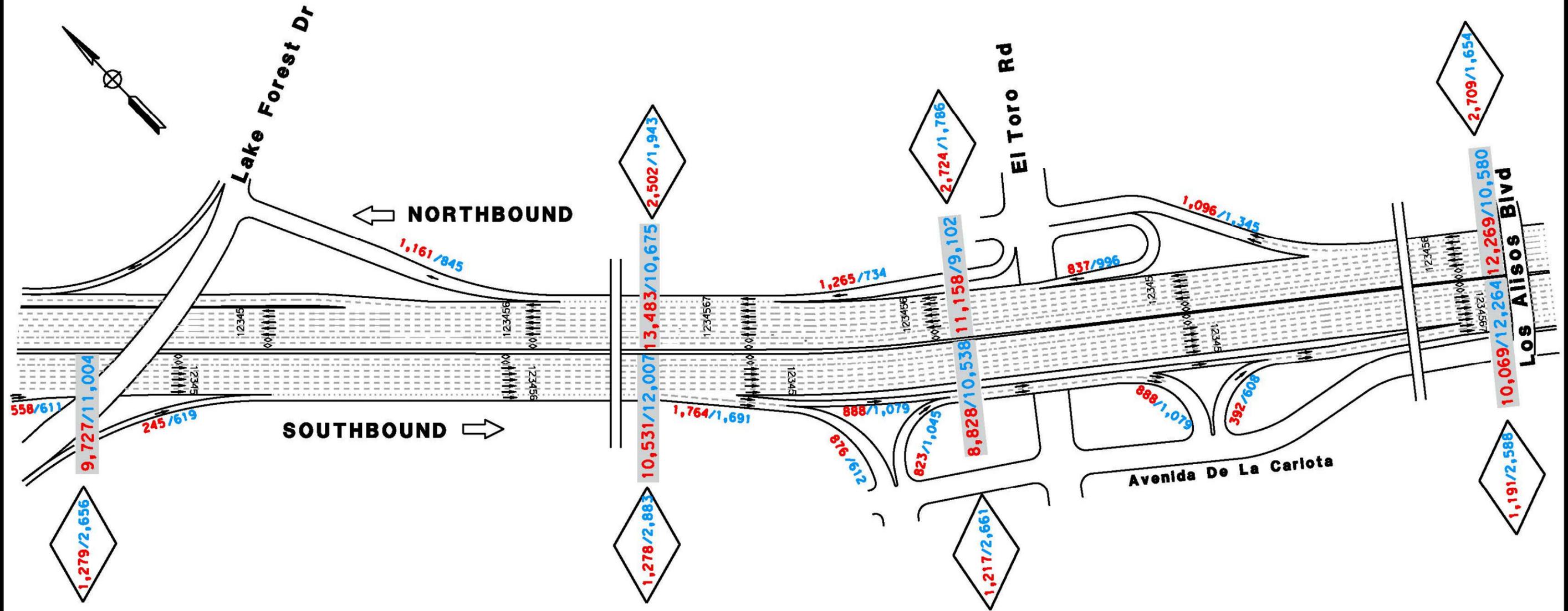
LEGEND:

- AM/PM = 2030 General Purpose Lane Traffic Volume
- AM/PM = 2030 HOV Traffic Volume
- AM/PM = 2030 Ramp Volume Traffic

EXHIBIT Q-1



Alternative 4 (2050) Freeway Traffic Volumes and Lane Configuration



LEGEND:

- AM/PM = 2050 General Purpose Lane Traffic Volume
- AM/PM = 2050 HOV Traffic Volume
- AM/PM = 2050 Ramp Volume Traffic

EXHIBIT Q-2